

VALUE-ADDED ELECTRICITY SERVICES: NEW ROLES FOR UTILITIES AND THIRD-PARTY PROVIDERS

**Jonathan Blansfield and Lisa Wood,
Institute for Electric Innovation**

**Ryan Katofsky, Benjamin Stafford and Danny Waggoner,
Advanced Energy Economy**

National Association of State Utility Consumer Advocates

Project Manager and Technical Editor:

Lisa Schwartz, Lawrence Berkeley National Laboratory

About the Authors

Institute for Electric Innovation (IEI)

Jonathan Blansfield is the Senior Manager of Strategic Alliances for IEI. He is responsible for day to day operations, programming and strategic growth of IEI's Technology Partner Roundtable, a select group of innovative technology firms that work with electric utility companies to deploy distribution-level, smart grid and renewable energy technologies and customer solutions. Blansfield works with senior industry executives to identify critical issues and emerging trends central to modernizing the country's energy grid and ensure that the Roundtable is a forum that advances thought leadership around technology, business model, policy and regulatory solutions for all electric power industry stakeholders. Previously, he held positions with the U.S. Department of Energy, the Federal Energy Regulatory Commission, the Solar Energy Industries Association, and a private energy regulatory law firm. Blansfield holds a J.D. from Vermont Law School and a B.A. from the University of Connecticut.

Lisa Wood is Vice President of The Edison Foundation and Executive Director of IEI. She collaborates with a Management Committee of over 25 electric utility CEOs and provides thought leadership on current issues and innovation in the electric power industry. Under Wood's leadership, IEI released its sixth book, *Key Trends Driving Change in the Electric Power Industry: Vol III*, in December 2016. Wood is an Adjunct Professor at Johns Hopkins University's School of Advanced International Studies and formerly a Nonresident Senior Fellow in the Energy Security and Climate Initiative at The Brookings Institution. She serves on several boards including the Advisory Board of Current, GE's new energy business. Prior to launching IEI, Wood was a principal with The Brattle Group, a principal with PHB Hagler Bailly, and a Program Director at RTI International. Wood holds a Ph.D. in public policy and management from the Wharton School of the University of Pennsylvania and an M.A. from the University of Pennsylvania.

Advanced Energy Economy (AEE)

Ryan Katofsky is Vice President of Industry Analysis at AEE, where he is responsible for supporting its various initiatives with data-driven analysis, research and thought leadership. He oversees AEE's regulatory work and is playing a leading role in AEE's 21st Century Electricity System Initiative, which is focused on accelerating regulatory and business model change in the electric power sector. Prior to joining AEE in May 2013, he spent 20 years consulting to the advanced energy industry, utilities and the public sector, including nine years at Arthur D. Little, six years at Navigant Consulting, and five years as an independent consultant. Katofsky holds a bachelor of engineering degree from McGill University and an M.S. in engineering from Princeton University.

Benjamin Stafford joined AEE in July 2016 as Manager of State Policy. Stafford works across AEE efforts, including state policy, research and analytics, and the 21st Century Electricity



System Initiative. Prior to joining AEE, he was a doctoral student and researcher with the University of Minnesota, Carlson School of Management, where his projects focused on social networks and organizational leadership and the implementation of energy policy. He worked for the state of Ohio from 2004 to 2012, primarily focused on strategic workforce development and the implementation of energy policies. Stafford holds a B.A. in business administration, master degrees in labor and human resources and public policy and management from The Ohio State University, and an M.S. in business research from the University of Minnesota.

Danny Waggoner is Senior Manager of Regulatory Transformation at AEE, where he focuses on accelerating regulatory and business model change as part of the 21st Century Electricity System Initiative. Among other activities, Waggoner leads a group of more than 50 companies engaging in the Reforming the Energy Vision proceeding in New York. Prior to AEE, he worked at the White House Council on Environmental Quality and the American Council on Renewable Energy, and is a former consultant to Third Way, a centrist think tank. Earlier, he worked at a nonprofit arm of the U.S. Chamber of Commerce focused on improving corporate social responsibility in developing countries. Waggoner holds B.A. degrees in government and Russian from The University of Texas at Austin, and an M.A. in science and technology policy from George Washington University.

National Association of State Utility Consumer Advocates (NASUCA)

Sheri Givens is President of Givens Consulting LLC and provides energy consulting services to consumer advocate and nonprofit organizations, trade associations, U.S. and international government agencies, and utilities on regulatory and consumer education issues. Her professional experience includes nearly 20 years in legal, legislative, regulatory and external affairs. Prior to consulting, Givens was twice appointed by the Texas Governor to lead the Texas Office of Public Utility Counsel, the state's consumer advocate agency for residential and small business utility customers. She also served on the boards of directors of the Electric Reliability Council of Texas and the Texas Reliability Entity Inc. and NASUCA's Executive Committee. Givens received a B.A. in government from the University of Texas at Austin and a J.D. from the University of Houston Law Center.

Robert Mork is Chair of the NASUCA Electric Committee. He led a subcommittee of interested members for the drafting of NASUCA's perspective for this report. Mork has served the Indiana Office of Utility Consumer Counselor since 2000 as Deputy Consumer Counselor for Federal Affairs, representing Indiana ratepayer interests before both FERC and the Federal Communications Commission. He now spends much of his time working for the effective development of electric wholesale markets under regional transmission organizations. Mork was active in the development of the Consumer Advocates of PJM States organization and currently serves as its president. He also is a representative of the Public Consumer Sector on the MISO Advisory Committee. Mork received his J.D. from Indiana University and a B.A. in history from Yale.



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2. *Distribution Systems in a High Distributed Energy Resources Future: Planning, Market Design, Operation and Oversight* (October 2015)
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8. *Regulatory Incentives and Disincentives for Utility Investments in Grid Modernization* (May 2017)

Reports and webinar materials are available at feur.lbl.gov. Additional reports are underway.



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Foreword by U.S. Department of Energy

The provision of electricity in the United States is undergoing significant changes for a number of reasons. The implications are unclear.

The current level of discussion and debate surrounding these changes is similar in magnitude to the discussion and debate in the 1990s on the then-major issue of electric industry restructuring, both at the wholesale and retail level. While today's issues are different, the scale of the discussion, the potential for major changes, and the lack of clarity related to implications are similar. The U.S. Department of Energy (DOE) played a useful role by sponsoring a series of in-depth papers on a variety of issues being discussed at that time. Topics and authors were selected to showcase diverse positions on the issues to inform the ongoing discussion and debate, without driving an outcome.

Today's discussions have largely arisen from a range of challenges and opportunities created by new and improved technologies, changing customer and societal expectations and needs, and structural changes in the electric industry. Some technologies are at the wholesale (bulk power) level, some at the retail (distribution) level, and some blur the line between the two. Some technologies are ready for deployment or are already being deployed, while the future availability of others may be uncertain. Other key factors driving current discussions include continued low load growth in many regions and changing state and federal policies and regulations. Issues evolving or outstanding from electric industry changes of the 1990s also are part of the current discussion and debate.

To provide future reliable and affordable electricity, power sector regulatory approaches may require reconsideration and adaptation to change. Historically, major changes in the electricity industry often came with changes in regulation at the local, state or federal levels.

DOE is funding a series of reports, of which this is a part, reflecting different and sometimes opposing positions on issues surrounding the future of regulation of electric utilities. DOE hopes this series of reports will help better inform discussions underway and decisions by public stakeholders, including regulators and policymakers, as well as industry.

The topics for these papers were chosen with the assistance of a group of recognized subject matter experts. This advisory group, which includes state regulators, utilities, stakeholders and academia, works closely with DOE and Lawrence Berkeley National Laboratory (Berkeley Lab) to identify key issues for consideration in discussion and debate.

The views and opinions expressed in this report are solely those of the authors and do not reflect those of the United States Government, or any agency thereof, or The Regents of the University of California.



Introduction

By Lisa Schwartz

The value proposition of modernizing electric power distribution grids rests in part on harnessing the control and communications capabilities of new energy generation, storage, delivery and consumption technologies to offer a broad range of value-added electricity services to retail electricity customers,¹ such as:

- Sophisticated energy management services for homes and businesses
- Integrated distributed energy resource (DER) services that comprehensively address energy efficiency, demand response, distributed generation and distributed energy storage options
- Electric vehicle (EV)-related services, such as charging stations, fleet management and EVs as storage
- Microgrids
- DER aggregation and market participation
- Special power quality services

The U.S. Department of Energy further highlights the importance of “adapting the existing regulatory system to give load-serving entities the opportunity to create sustainable business models while incorporating emerging technologies that provide value-added energy services to customers and the nation.”²

But opinions differ on what constitutes a basic electricity service versus a value-added service. Also subject to debate is who should provide value-added services — utilities, third parties or both — and under what conditions, and how to treat utility costs for enabling these services.³ Views diverge on whether utility provision of a new value-added service is dependent on whether the service is an extension of its natural monopoly functions or is independent of those functions. State law may dictate what additional services a utility may provide or, conversely, statutes may restrict participation by third parties.

This report presents differing viewpoints on the following questions:

1. What new value-added services does grid modernization enable, and what are the appropriate roles for utilities and third-party service providers? Should utilities

¹ DOE (2015), at 17, *Grid Modernization Multi-Year Program Plan*. <https://energy.gov/downloads/grid-modernization-multi-year-program-plan-mypp>.

² DOE (2015), at 99.

³ The National Association of Regulatory Utility Commissioners’ *Electric Utility Cost Allocation Manual* (1992) may be instructive: <http://pubs.naruc.org/pub/53A3986F-2354-D714-51BD-23412BCFEDFD>.



- directly compete with competitive providers of new value-added services or provide new platforms and procurement mechanisms to enable third-party services?
2. What policy and regulatory changes may be needed in the face of increasing competition for electricity services from third-party providers?
 3. How should regulators address utility costs for new value-added services, considering customers who do not participate in these offerings?
 4. What policy and regulatory approaches best balance promoting innovation with consumer protection?

Authors representing diverse perspectives provide their responses:

- *Utility* – Jonathan Blansfield and Lisa Wood, Institute for Electric Innovation (Chapter 1)
- *Third-party service providers* – Ryan Katofsky, Benjamin Stafford and Danny Waggoner, Advanced Energy Economy (Chapter 2)
- *Consumers* – National Association of State Utility Consumer Advocates (Chapter 3)

The Institute for Electric Innovation (IEI) makes the case that electric companies should be able to offer value-added services directly to customers, in partnership with technology companies, or both. From IEI's perspective, utilities are best positioned to grow the market for these services and have the ability, willingness and mandate to serve all customers, regardless of income, location or class. Utilities also can optimize value-added services, such as targeting DERs for specific locations, as well as deploy services at scale, leading to lower cost for consumers.

In contrast, Advanced Energy Economy (AEE) maintains that regulated utilities and competitive suppliers should not be competing head to head to provide the same value-added services to the same customers. In AEE's view, services that *can* be competitive — those that do not exhibit monopoly characteristics — *should* be competitive in order to achieve the greatest benefits for consumers in the long run. Nevertheless, AEE also concludes that utilities have an essential role to play in the provision of value-added services and should be rewarded for doing so. Further, AEE finds that value-added services based on technology deployed on the customer side of the meter should generally be the domain of the competitive market, subject to specific exceptions that utility regulators make on a case by case basis. This does not preclude the utility from engaging in revenue-producing activities that are connected to services delivered on customer premises. The organization emphasizes a market facilitation and development role for utilities as platform providers and avoiding utility advantages that could be achieved by shifting to ratepayers the financial risk of offering value-added services.

Generally, most National Association of State Utility Consumer Advocates (NASUCA) members believe that utilities should participate in providing potential competitive offerings, with certain regulations in place. These members recognize that utilities may be able to provide value-added services at lower costs to consumers.⁴ In addition, NASUCA points out that regulated utilities

⁴ Not all NASUCA members agree that utilities should be allowed to compete with third parties in providing value-added services. For example, in restructured states, some consumer advocates argue that utilities should not



have state oversight, whereas competitive providers may not be subject to similar regulations. Consumer advocates also envision possibilities for utilities to act as a system planner that maintains and builds infrastructure to enable a platform for certain value-added services offered by third-party providers. For example, utilities could connect buyers and sellers or act as independent distribution system operators.

The authors anticipate policy and regulatory changes needed in light of value-added services that modern grids enable, such as the following:

- **IEI**
 - Rules to facilitate third-party engagement and a level playing field for all providers
 - Accurate and transparent price signals that separately price three distinct services: (1) energy grid, (2) electricity supply and (3) value-added services
 - Ensure consumers access to value-added services, set a performance floor, reinforce consumer protections, promote innovation and minimize barriers to entry for providers

- **AEE**
 - Rules to maintain strong competition to spur innovation
 - Financial incentives for utilities to facilitate collaboration with third-party providers and to give utilities more options for revenue and earnings as they evolve away from a traditional business model based largely on capital investment
 - Pricing for any value-added services offered by regulated utilities should account for use of resources that customers pay for under basic service, and ensure the utility does not subsidize value-added services or earn outsized profits on them

- **NASUCA**
 - Marketing flexibility or other allowances for utilities to help keep consumers connected to the grid and contributing to fixed costs
 - Strong, transparent codes of conduct and transaction rules for nonregulated utility affiliates
 - Third-party access to consumer data, with privacy protections
 - Consumer protections for new offerings, including the prohibition of unfair, false, misleading or deceptive advertising or marketing practices.
 - Uniform industry standards for the marketplace which promote equitable treatment and safety of consumers
 - Effective and fair competition for services whenever applicable

compete because they may be prohibited by law or should not be allowed to grow rate base by entering into new businesses.





1. A Utility Industry Perspective on Value-Added Electricity Services

By Jonathan Blansfield and Lisa Wood, Institute for Electric Innovation

Introduction

The transformation of the electric power industry is unfolding state by state — as electric companies across the United States modernize and digitize the energy grid to enhance energy reliability, resilience and security; to integrate and manage growing numbers of renewable and distributed energy resources (DERs); and to provide customers with more options for using and managing their energy. Advances in technology, energy grid digitization and modernization, and cost reductions are setting the stage for electric companies and third-party providers to expand their offerings of customer solutions beyond electricity supply and energy grid services (see Figure 1-1). This Berkeley Lab report refers to these emerging customer solutions as “value-added services.” This term itself has issues of interpretation. For example, the introduction to this report includes distributed battery energy storage as a value-added service. However, to many, storage is just an energy service. In an increasingly digital and distributed energy landscape, the demarcation between so-called “value-added services” and other services can be fuzzy.

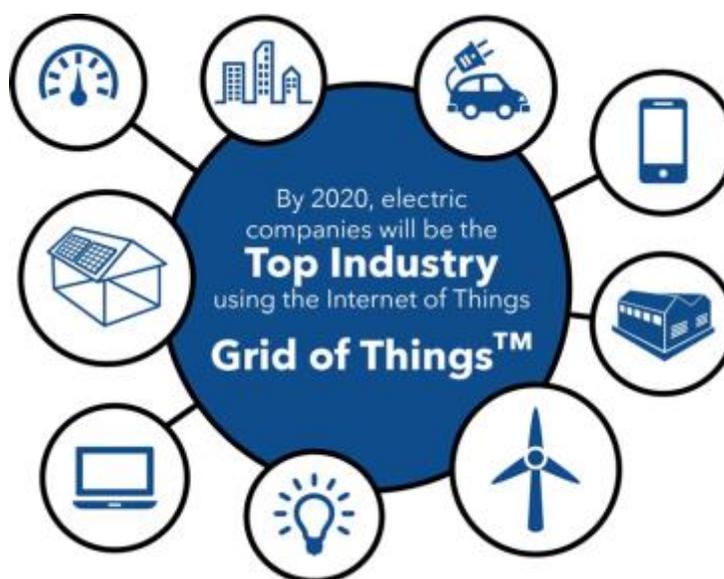


Figure 1-1. Grid of Things™



This chapter of the report focuses on retail electricity services enabled by the energy distribution grid. It does not address wholesale electricity markets or the transmission system.

Electric distribution companies (electric companies) own, maintain, operate and invest in the distribution energy grid to provide electricity service that is safe, reliable, secure, increasingly clean and affordable to all customers. In this report, value-added services are defined as energy services beyond electricity supply and energy grid services. It is critical for electric companies to be able to offer value-added services directly to customers and/or in partnership with other companies. Some assert that electric company participation in the market hurts competition. We disagree. As this chapter illustrates, allowing both electric companies and third-party providers to offer these services will advance the market quickly and efficiently to the benefit of all customers.

This chapter describes how electric companies can uniquely provide customer value through participation in the value-added services market, but does not address cost or pricing issues in any detail. Value-added services are already offered today by electric companies, by third-party providers, and by electric companies in partnership with technology companies (also known as third-party providers).

Today, electric companies fairly and effectively compete with third party providers. To demonstrate the importance of electric company participation in this emerging market, we provide some current examples of value-added services offered by electric companies to both residential and commercial customers.



1. What new value-added services does grid modernization enable, and what are the appropriate roles for utilities and third-party service providers? Should utilities directly compete with competitive providers of new value-added services or provide new platforms and procurement mechanisms to enable third-party services?

Grid modernization efforts — underway for the past decade in the United States — are enabling a host of new customer-facing energy products and services. The introduction to this Berkeley Lab report lists some broad categories of emerging value-added services. Without the energy grid, these value-added services would not be possible. Electric companies have a critical role to play in providing value-added services, especially when such services enhance or help to optimize the energy grid.

Why Electric Companies Should Be Able to Provide Value-Added Electricity Services

The terms “electric company” and “competition” are not mutually exclusive. Opponents of electric companies providing new energy products and services to customers assert that such participation will have anti-competitive effects. On the contrary, allowing electric companies to compete provides customers with more, rather than fewer options.

One job of the regulator is to ensure the best economic outcome for all customers. Allowing both electric companies and third-party providers to compete to provide these services provides the greatest potential benefit to customers. Rules and regulations can be put in place to facilitate this. In addition, a level playing field is essential for the development of a successful market, and all players must be held to the same standards, whether consumer protections, interconnection codes and standards or accounting principles.

Electric companies have the ability, willingness and historical mandate to serve all customers, regardless of income, geographic location or type of customer. This sets electric companies apart from third-party providers that have no obligation to serve. In fact, when electric companies offer value-added services, the services are offered to a far larger group of

Electric companies have the ability, willingness and historical mandate to serve all customers, regardless of income, geographic location or type of customer. This sets electric companies apart from third-party providers that have no obligation to serve.

customers (including low-income customers). Limiting electric company participation will limit competition and slow the development of the market.

Following are four primary reasons why electric companies should have the option to participate in the value-added services market. Ultimately, electric company participation benefits customers.



Reason One. Electric Companies Are Well Positioned to Grow the Market for Value-Added Services

Electric companies are well-positioned to spur market growth and drive customer participation in, and demand for, value-added electricity services because they have a brand that customers recognize and typically trust. Hence, electric companies are important for both establishing new markets and for growing markets. In fact, third-party providers often turn to electric companies for help in providing new services. This is especially true in large parts of the country where third-party providers are relatively absent at present.

Electric companies ... have a brand that customers recognize and typically trust. Hence, electric companies are important for both establishing new markets and for growing markets.

Reason Two. Electric Companies Will Expand Customer Access to Value-Added Services

Electric companies are mandated to serve all customers. This legal and social responsibility often makes them trusted energy advisors to their customers and uniquely suited to provide value-added services, especially to those customers that third-party providers might ignore, such as those with low credit scores who are in good standing with their electric companies. Segments of the population that are not prime targets for many service providers today, such as low- to moderate-income households, represent a significant portion of U.S. households.⁵

Electric companies across the country should have the option to offer customers access to additional services such as renewable energy, energy storage, private solar and more. Electric company-provided value-added services should not be limited to specific populations. If the goal is to create a market where multiple value-added services are available to as many customers as possible, restricting the pool of market participants is not in the best interest of customers.

Reason Three. Electric Companies Can Build Visibility into the Energy Grid and Extract the Most Value from Value-Added Services

Allowing electric companies to offer value-added services to all customers (often in partnership with other companies) facilitates optimization of these services through better resource location and integration. Working with customers to target resources for specific locations on the energy grid can provide additional benefits for both customers and the energy grid. When electric companies have visibility into and oversight of the operation of customer-sited DERs, these resources can provide more benefits. Electric companies are in the best position to leverage

⁵ For example, in the United States, 35 million households (roughly 30 percent of all U.S. households) are eligible for the Federal Low Income Home Energy Assistance Program (LIHEAP), a widely used metric to determine whether a customer qualifies as low-income. See NEUAC (No date).



customer-sited resources to the benefit of all customers.⁶ As the distribution grid owners, operators, and the ultimate reliability backstop, electric companies should be involved in how value-added services are offered and deployed, helping to create a more efficient and optimized electric system (see Figure 1-2).

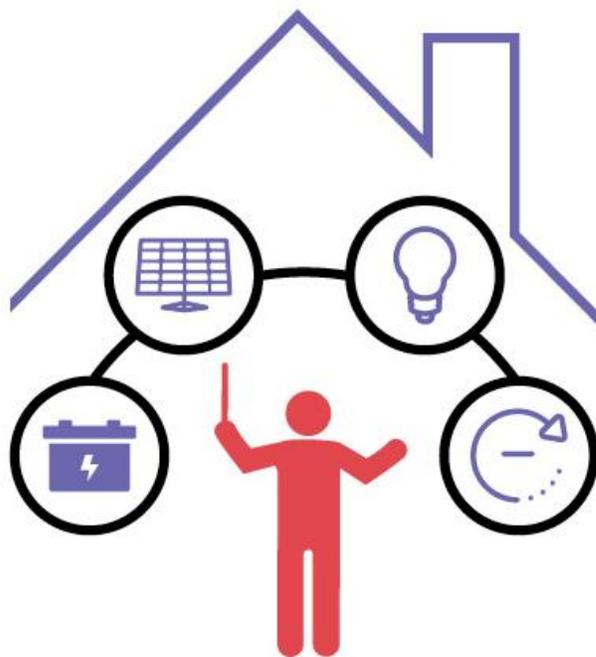


Figure 1-2. Utility as the energy conductor

Reason Four. Electric Company Participation Yields More Competition and Lowers Costs to Customers

Customers generally benefit from open and transparent competition provided that proper rules and regulations are in place. Competitive pressure from multiple market participants can put downward pressure on costs, broaden customer access to the market, and spur innovation in developing new products and services. Electric company participation in the market for solar photovoltaic (PV) and battery storage has helped to drive down costs. Today, electric companies either own or contract for the majority of solar resources in the United States. This has resulted in tremendous decreases in cost, and this cost decline continues today. Electric company participation in these markets makes sense and benefits customers.

⁶ For example, in both California and New York, distributed energy resources are increasingly being deployed as an alternative way to meet growing demand in particular areas.



2. What policy and regulatory changes may be needed in the face of increasing competition for electricity services from third-party providers?

Creating a competitive value-added services market requires thinking differently about regulation. The current cost of service regulatory model is out of step with the rapid pace of technological innovation. Electric companies must have the flexibility to invest in new technology to provide the services that today's customers want and to offer new services in competition with and in partnership with third-party providers. The regulatory model for value-added services must be flexible and nimble.

Three Types of Distinct Energy Services

In this section, we describe the different components of the retail electric market (again, this paper does not focus on transmission) and where value-added services fit. Today, regulated electric companies in the United States provide energy distribution grid services (essentially the reliable delivery of electricity over distribution power lines to end-use customers), electricity supply services (the energy itself) and — in some cases — value-added services. The specific services an incumbent electric company provides, how those services are structured, and whether they are also provided by third parties are determined by state law and/or by the regulatory structure in the state in which the electric company operates. Regardless, it is essential to differentiate between largely noncompetitive services and value-added electricity services.

Distribution Grid Services

In the United States, regulated electric companies own, maintain, operate and invest in the distribution grid to ensure that electricity service is safe, reliable, secure, increasingly clean and affordable. In a nutshell, the distribution grid is the infrastructure that delivers reliable electricity to end-use customers 24/7. Distribution energy grid services are regulated by state utility commissions and are noncompetitive.

Electricity Supply Services

Electricity supply service is the electricity that Americans rely on to power their everyday lives. It is the provision of electrons to end-use customers made possible by the energy grid and related infrastructure. In about two-thirds of the states, electricity service to residential and small commercial customers is a monopoly service, and electric companies in those states provide this service to all customers in their service territory based on their regulatory compact. In other states (mostly in the Northeast, Mid-Atlantic and upper Midwest), customers have the option to choose their electricity provider (called "retail choice"), and a mix of electric companies and third-party retailers supply electricity. Retailers typically compete by providing some type of customization (such as "green" electrons, indexed pricing, flat bills) layered on top of the electricity supply service. In these "retail choice" states, most residential and small commercial customers (i.e., mass market customers) have chosen to remain with the electric company for



electricity supply service. In one state, Texas (except for customers who are served by a municipal utility or an electric cooperative or are outside of the Electric Reliability Council of Texas [ERCOT] region), only third-party retail electricity providers can provide electricity supply service directly to mass market customers; the regulated electric company is precluded from doing so.

Value-Added Services

For purposes of this report, we define value-added services as those services that customers may want in addition to electricity supply services and distribution grid services. The term “value-added” implies that there is some prerequisite upon which the value-added service builds. In this case, value-added services are “enhancements” to electricity supply and energy grid services and may include customized or bespoke energy products/services that meet customer demand for renewable energy, integrated energy management solutions, energy storage, microgrids, electric vehicle charging, private or community solar, energy efficiency, or other services. In fact, some of these services are provided by electric companies today (e.g., storage and energy efficiency) via mandates in state laws or from public utility commissions.

Value-added electricity services can have benefits and costs for both the energy grid and the customer. It may be useful to identify at least two categories of value-added services: (i) services primarily meeting customer needs and (ii) services primarily meeting energy grid needs:

Value-added electricity services can meet a particular customer want or need such as lowering energy bills, optimizing energy use, being a “prosumer” that produces and consumes energy, or choosing a specific energy mix.

- Value-added electricity services can meet a particular customer want or need such as lowering energy bills, optimizing energy use, being a “prosumer” that produces and consumes energy, or choosing a specific energy mix.
- Likewise, electric company-owned, customer-sited assets may

meet a particular energy grid need by acting as resources that provide energy, capacity, and/or other services to the power system.

Starting to distinguish among the types of value-added services may be a useful next step.

3. How should regulators address utility costs for new value-added services, considering customers who do not participate in these offerings?

Sending accurate and transparent price signals is a necessary condition for a robust, competitive value-added services marketplace. Most retail tariffs in the United States today do not separately price the distinct energy services — energy grid services, electricity supply services



and (in some cases) value-added services. Hence, today's customers do not really understand that they are receiving multiple services bundled together.

In many states, a large percentage of the cost of the energy grid is captured volumetrically through the retail price charged for the delivered commodity electricity or, in deregulated states, also via a volumetric distribution grid charge. These volumetric charges do not necessarily recognize the fixed costs associated with the energy grid.⁷ It is important to differentiate energy services and to price each service (and allocate costs) appropriately. In fact, the Ontario Energy Board introduced a delivery charge to cover the cost of delivering electricity and is implementing it over a five-year period. This includes a customer service charge, a distribution charge, a transmission charge and a line loss adjustment. By 2019, the distribution charge will be a fully fixed charge for most customers to cover the (largely fixed) cost of distribution grid services.⁸

To develop a competitive, value-added services market, a first step is to ensure that the pricing of retail electricity supply and energy grid services is transparent, cost-based, and distinct from the pricing of competitive value-added electricity services.⁹ A second step is to ensure a level playing field among all participants (including consumer protections, for example). A third step is to ensure that value-added services are paid for by those customers who benefit from them. Such services should not be paid for on a bundled basis with noncompetitive services.

In some instances, it is appropriate for electric companies to rate base or socialize the costs of some of the investments required to provide these services to customers (e.g., energy grid upgrades to accommodate high solar PV penetration or “make ready” infrastructure to ensure that the energy grid can accommodate a sufficient number of electric vehicles in states with air quality goals).

In some instances, it is appropriate for electric companies to rate base or socialize the costs of some of the investments required to provide these services to customers (e.g., energy grid upgrades to accommodate high solar PV penetration or “make ready” infrastructure...).

It is important for rules and regulations to be in place to avoid a cost shift or subsidy from one customer to another when only one customer benefits from a value-added service. This case is simple: The customer alone pays the price to purchase the private value-added service.

⁷ Most fixed costs today for the energy grid are recovered through retail electricity charges or other volumetric charges. This is an inefficient and nontransparent way to recovery fixed energy grid-related costs. See Wood, Hemphill et al. (2016).

⁸ The Ontario Energy Board delivery charge recovers fixed costs for both transmission and distribution services. <https://www.oeb.ca/rates-and-your-bill/electricity-rates/understanding-your-electricity-bill>

⁹ See generally, Wood, Hemphill et al. (2016).



However, when multiple customers benefit from cleaner air or when the electric company is required to invest in the energy grid to integrate value-added services (regardless of the provider) or when the electric company is mandated to provide a service, then some of these costs will be socialized. **This is why it is important to start to categorize value-added services; there is no “one size fits all” that leads to a simple regulatory solution.** And this needs to happen sooner rather than later.

4. What policy and regulatory approaches best balance promoting innovation with consumer protection?

Rules and regulations can be put in place to facilitate third-party engagement and preclude unfair competition from the incumbent electric company, so that all customers can benefit. But these rules must not be unfairly onerous to the electric company or to the third-party provider. For example, in some states, affiliate rules are overly strict and actually mitigate potential benefits to customers.

Earlier in this chapter, we provided four primary reasons why electric companies should have the option to offer value-added services to customers. In this section, we provide examples of how electric companies are offering value-added services today for exactly these reasons.

Example One. Electric vehicle charging infrastructure in California demonstrates how electric companies are well positioned to grow the market for value-added services.

California’s journey to defining the role of electric companies in providing plug-in electric vehicle (PEV) charging infrastructure is an excellent case in point on the important role that electric companies can play in providing access to new energy services to a broad customer base.

In July 2011, the California Public Utilities Commission (CPUC) prohibited electric companies from owning PEV charging infrastructure beyond what they needed for their own fleets or workplaces.¹⁰ In 2014, the CPUC overturned its 2011 blanket prohibition and endorsed an expanded role for electric companies in developing and supporting PEV charging infrastructure. The CPUC recognized that electric companies (or electric companies supporting third-party providers) have a unique role to play in providing and expanding PEV infrastructure, especially to underserved markets such as low-income communities or multi-unit dwellings. According to the CPUC:

... the utilities have a crucial role in the electrification of transportation as the infrastructure support and fuel supplier in their service territories.... [C]ertain market segments are harder for third parties to penetrate and the utilities may

¹⁰ CPUC Decision 10-07-044; 11-07-029. The CPUC found that “certain benefits of IOU ownership of electric vehicle service equipment (EVSE) may exist, but these benefits are speculative and do not outweigh the competitive limitation that may result from utility EVSE ownership.”



be better positioned to develop those market segments or support third party providers to do so. As [Southern California] Edison noted, even limited utility involvement to accelerate the PEV infrastructure market can improve the business case for third parties.¹¹

Between 2011 and 2014, it became clear that limiting charging infrastructure services to third-party participation was insufficient to create a market that is self-sustaining and capable of meeting the state’s climate-related targets. Today, the state’s three investor-owned electric utility companies (IOUs) — Pacific Gas & Electric, San Diego Gas & Electric (SDG&E) and Southern California Edison — are implementing pilot programs to install infrastructure to support PEV charging at multi-unit dwellings, workplaces and public interest destinations.¹²

- PG&E will install “make ready” infrastructure, including PEV service connection upgrades and new PEV supply infrastructure for up to 7,500 Level 2 charge ports at multi-unit dwellings and workplaces. For multi-unit dwellings and installations in disadvantaged communities, the building owner can choose to own the charging equipment or let PG&E own it (up to 35 percent of the chargers).
- SDG&E will install and own up to 3,500 Level 1 and Level 2 charge ports at multi-unit dwellings and workplaces, with a special rate that encourages off-peak charging.
- SCE will install “make ready” infrastructure including new PEV supply infrastructure for up to 1,500 Level 1 and Level 2 charge ports at workplaces, multi-unit dwellings, and other locations where vehicles are parked for extended periods of time.

All three original pilot project proposals from the California IOUs were initially denied by the CPUC. However, the CPUC eventually approved smaller scale projects which passed its balancing test, which balances ratepayer interest in just and reasonable rates, and the effect on competition against the cost and size of the project, and immediate and long-term benefits of utility ownership. All three of the IOU smaller scale projects met this test.

Electric companies are uniquely positioned to spur market growth and development, but are often constrained by regulatory processes.¹³ Alternative regulatory approaches are needed to allow electric companies to deploy value-added services, especially in nascent markets such as EV charging infrastructure. One straightforward solution is simply to streamline the regulatory approval process for value-added services. It is critical for regulators and state legislatures to

¹¹ CPUC Decision 14-12-079, at 7.

¹² The three electric company pilots will install the infrastructure to support up to 12,500 charging stations with total budgets up to \$197 million.

¹³ As stated by the CPUC in addressing this issue, “[w]e recognize the need for utility involvement in spurring the development of an EV charging infrastructure, but at the same time we must be cognizant of the competitive impacts that SDG&E’s concentrated ownership could have on third parties, especially during the early years of deploying EV charging infrastructure.” CPUC Decision 14-12-079 at 107. Third-party providers noted competitive concerns, but at least two have agreed to the proposed settlement which suggests their concerns have been addressed.



weigh in on ways that will allow the PEV charging infrastructure market to develop efficiently and rapidly.

Example Two. Private (or rooftop) solar PV in Arizona demonstrates how electric companies can expand customer access to value-added services.

Recent regulatory decisions in Arizona regarding who can provide private solar PV to customers offers a boots-on-the-ground perspective on the critical role of electric companies in providing this value-added service. The Arizona Corporation Commission (ACC) initially rejected a proposal by Arizona Public Service (APS) to develop 20 megawatts (MW) of distributed solar, citing concerns about overcrowding the already-competitive marketplace and cost to all customers.¹⁴

TEP is targeting customers with rooftops where solar provides energy grid benefits and is integrating new inverter technologies into these systems. Importantly, any TEP customer in good standing is eligible for this program. This broad customer eligibility is in stark contrast to the high credit-score customer group typically targeted by private solar companies operating in Arizona.

But in 2014, the ACC approved APS' two-stage project to offer solar PV to retail customers, with a first stage of 8 MW, followed by a second stage of 2 MW.¹⁵

In its approval of the modified pilot, the ACC stated that, in addition to providing access to this resource to underserved customers, "there appears to be an opportunity for sensible and cost-effective utility involvement in distributed solar in order to ensure grid reliability and resiliency as energy generation and delivery continue to evolve."¹⁶

The ACC also approved Tucson Electric Power's (TEP) Residential Solar Program, a \$10 million private solar pilot program of 3.5 MW, serving approximately 500–600 customers.¹⁷ Under this program, TEP installs an optimally sized rooftop solar PV system for each customer who participates and then TEP operates and maintains the system over its estimated 25-year life. In

¹⁴ APS proposed to deploy systems on approximately 3,000 customer rooftops and on the company side of the meter. APS planned to "rent" these rooftops (over 20 years) in exchange for a \$30 per month bill credit. According to APS, "the simple bill credit structure will provide all customers — including those who cannot currently afford it — an opportunity to "go solar." Furthermore, APS proposed to support the local solar community by competitively selecting third-party local solar vendors to install the distributed generation systems across APS' service territory. Arizona Corporation Commission (July 28, 2014). Docket No. E-01345A-13-0140.

¹⁵ Arizona Corporation Commission (Dec. 28, 2014). Docket No. E-01345A-13-0140. Decision 74878. According to the decision, the additional 2 MW should be deployed only if coupled with distributed storage in order to achieve operational benefits.

¹⁶ Arizona Corporation Commission (Dec. 28, 2014) at 5–6.

¹⁷ Arizona Corporation Commission. (Dec. 31, 2014). Docket No. E-01933A-14-0248, Decision No. 74884.



exchange, customers receive a fixed monthly bill based on their current electricity usage and can opt out of the program for a minimal fee.¹⁸

TEP is targeting customers with rooftops where solar provides energy grid benefits and is integrating new inverter technologies into these systems. Importantly, any TEP customer in good standing is eligible for this program. This broad customer eligibility is in stark contrast to the high credit-score customer group typically targeted by private solar companies operating in Arizona. In addition, TEP hires local contractors to install the solar panels.

The electric company-provided solar represents only a fraction of the private solar market in Arizona. The ACC's approval of these programs indicates the vital role that electric companies can play in providing private solar to all types of customers. And because the service is targeted to rooftops with specific characteristics, the service benefits both customers and the energy grid.

Example Three. Customer-sited battery energy storage demonstrates how electric companies can build visibility into the energy grid and extract the most value from value-added services.

Storage is a flexible solution that has the potential to meet the needs of both the energy grid and customers. Storage can provide grid-edge visibility, facilitate better integration and management of variable energy resources, and provide resilience benefits. Additionally, storage can help customers better manage their energy use (see Figure 1-3).

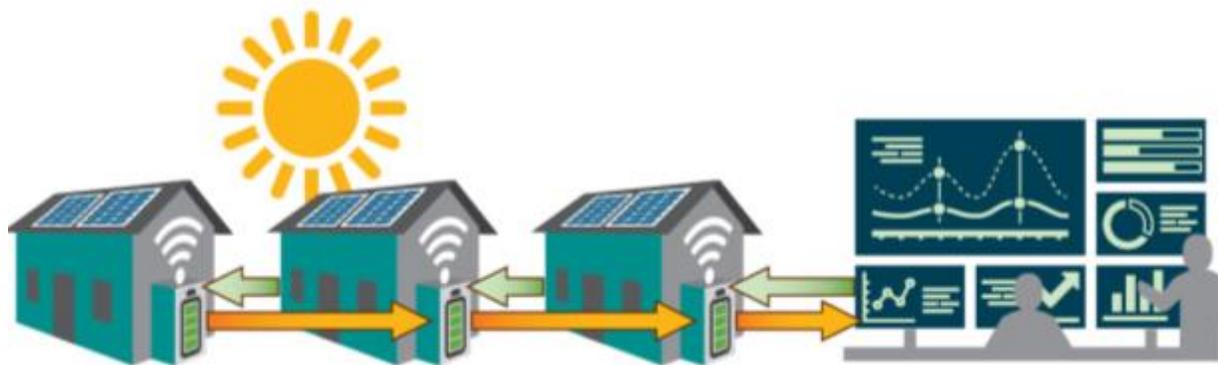


Figure 1-3. Residential battery storage system

California has the most robust mandates for energy storage in the nation. In addition to Assembly Bill 2514 (passed in 2013), which required the state's three IOUs to procure 1,325 MW

¹⁸ If annual average monthly consumption rises or falls by more than 15 percent, the customer's fixed monthly bill is adjusted accordingly. Arizona Corporation Commission. (Dec. 31, 2014).



of energy storage, the CPUC issued an order in 2017 requiring the state’s IOUs to procure an additional 500 MW of behind-the-meter energy storage.

Recent decisions and legislative mandates in other states are helpful in understanding how this market is growing and how electric companies are uniquely suited to leverage the full benefits of storage for both energy grid benefits and customer energy management solutions.

- **Massachusetts.** In June 2014, the Massachusetts Department of Public Utilities (DPU) issued Order 12-76-B, which required that all IOUs submit grid modernization plans (GMPs).¹⁹ In the fall of 2016, the Massachusetts Department of Energy Resources (DOER) released *State of Charge: Massachusetts Energy Storage Initiative* — a direct outgrowth of the June 2014 order. The report presented a suite of policy recommendations to deploy 600 MW of advanced energy storage in the Commonwealth by 2025 and recognized the many significant grid modernization benefits electric company ownership of energy storage yields.²⁰ In August 2016, Bill H.4568 became law in Massachusetts.²¹ This legislation explicitly allows electric distribution companies to own energy storage assets. In July 2017, the DPU set a 200 megawatt-hour (MWh) energy storage procurement target that the state’s IOUs must reach by 2020.²²
- **Oregon.** Portland General Electric and PacifiCorp have a legislatively-mandated 5 MWh energy storage procurement target. The companies have the option to own or contract for the storage resources. The Oregon Public Utility Commission (OPUC) allowed the electric companies to deploy this technology in the most cost-effective and efficient manner — neither proscribing nor prohibiting involvement in customer-sited resources. The companies are required to submit proposals for OPUC approval detailing the benefits, costs, and learning objectives of proposed storage project(s), including justification for the ownership model selected.²³

As these examples demonstrate, electric companies have the ability to jump-start the market and to leverage the multiple values of energy storage for the benefit of both the customer and

¹⁹ The GMPs may include investment in advanced energy storage if supported by a comprehensive business case analysis that includes: (1) a detailed description of the proposed investments, including scope and schedule; (2) the rationale and business drivers for the proposed investments; (3) identification and quantification of all quantifiable benefits and costs associated with the investment; and (4) identification of all difficult to quantify or unquantifiable benefits and costs.

²⁰ In Massachusetts, for example, National Grid can own distributed solar on a regulated basis. MA DPU Order 12-76-B (June 2014), at 13. Objectives include optimize demand (which includes reducing system and customer costs), integrate distributed resources, and improve workforce and asset management. Additionally, the Massachusetts DOER identified policies and programs to help realize energy storage system benefits and increase the amount of storage deployed in the state, including grant and rebate programs, storage in state portfolio standards, establishing/clarifying regulatory treatment of electric company storage, statutory changes to enable storage as part of clean energy procurements, ISO New England market rule changes and others.

²¹ Commonwealth of Massachusetts (2016).

²² Mass.Gov (June 30, 2017).

²³ Oregon Legislative Assembly (2015).



the energy grid.²⁴ These recent decisions and legislative mandates make it clear that allowing electric companies to offer storage services makes sense.

Example Four. Energy efficiency programs demonstrate how electric company participation yields more competition and lowers costs to all customers.

Energy efficiency programs are a good example of a very cost-effective value-added service that electric companies have been providing to their customers for the past few decades. These programs — funded by electric company customers — undergo careful regulatory review, and program funding is authorized only if the benefits outweigh the costs.²⁵ Electric company energy efficiency programs are a cost-effective way for customers to save energy and money, and for electric companies to deliver a broad set of benefits to all customers.

In 2015, U.S. energy efficiency programs saved 169 terawatt-hours (TWh) of electricity, up from 155 TWh in 2014.²⁶ Some energy efficiency programs also reduce peak demand. Typical electric system benefits include avoiding the cost of producing or procuring energy and avoiding or deferring the need to build new power plants or upgrade substations. Energy savings from energy efficiency programs also reduce carbon dioxide (CO₂) emissions. In 2015, energy efficiency programs avoided 119 million metric tons of CO₂.²⁷

In 2015, electric companies spent \$7.2 billion on energy efficiency programs.²⁸ These programs are incredibly cost-effective; the latest estimates show that they deliver energy savings at about 2 cents per kilowatt-hour saved over the life of a program. Regulatory frameworks such as decoupling, lost revenue recovery, and performance incentives have been put in place in many U.S. states to support energy efficiency programs and are a critical element to their success.

Energy efficiency programs are a good example of how electric companies moved the energy efficiency market forward within a regulatory framework, but are not the only players in this market. Today, electric companies offer energy efficiency services in collaboration with technology companies, and third-party providers also offer energy efficiency services directly to customers.

²⁴ See Edison Electric Institute (May 2017).

²⁵ Many electric company-sponsored energy efficiency programs today are funded through surcharges paid by all customers, including those that do not participate in these programs, but still benefit from them. Many of these programs are legislatively mandated and regulated by the state. See Institute for Electric Innovation (December 2014).

²⁶ Institute for Electric Innovation (December 2014).

²⁷ *Ibid.*

²⁸ *Ibid.*



Electric Companies Are Partnering With Technology Companies to Provide Value-Added Services

In addition to the examples just described which specifically demonstrate the four reasons for electric company participation in the value-added services market, numerous successful partnerships are already in place between electric companies and technology companies to offer new services to customers. The following are a few examples:

- Commonwealth Edison in Chicago built an electricity products marketplace in partnership with Simple Energy, a technology company. This partnership enables ComEd to provide customers access to information and selected energy-efficient products, rebates and discounts to help them better manage and control their energy usage.
- Xcel Energy is working in partnership with Clean Energy Collective, a technology company, to offer customers access to energy produced from community solar installations. Xcel owns and operates these assets, while the technology partner built and maintains them and helps Xcel acquire customers for the energy offtake.
- In Hawaii, Stem, Inc. — an energy storage hardware and software provider — deployed 1 MW of storage across 29 Hawaiian Electric business customer sites to be aggregated by the electric company as a dispatchable resource for capacity firming. These assets, owned by Stem and Hawaiian Electric, can be monitored by the customer and controlled by Hawaiian Electric system operators.
- Kansas City Power and Light is working with Nest Labs and CLEAResult to offer its Missouri customers Nest Learning Thermostats and Rush Hour Rewards for participation in the utility’s demand response program.
- DTE in Michigan is working with Powerley to help the utility’s customers manage energy use and optimize smart in-home technology with a mobile energy app and an energy bridge that “auto-binds” to a home’s smart meter.

These are just a few of the many electric company and technology company partnerships that currently are underway with the sole purpose of providing value-added services that benefit customers.²⁹

Conclusion

Electric companies are uniquely suited to the value-added services market because they have experience growing markets, engaging a wide variety of customers, using their expertise as energy grid operators to deploy resources where they are most valuable, and keeping costs low. Their participation benefits both customers and the energy grid, and it is critical to recognize the important role electric companies play.

²⁹ For project-specific information on electric companies working in partnership with technology companies, see The Edison Foundation Institute for Electric Innovation’s Technology Partner Snapshot Gallery at <http://www.edisonfoundation.net/iei/partners/Pages/snapshots.aspx>.



In defining the rules and regulations governing the participation of both electric companies and third-party providers, the starting point is simple: the customer.

- Market rules should focus on providing customers access to services, ensuring a minimum level of performance, establishing or reinforcing existing consumer protections, promoting innovation, and minimizing barriers to entry for providers of all kinds.
- It is also important to start to categorize value-added services — there is no “one size fits all” regulatory solution.

This will help to ensure that customers reap the benefits of competitively provided value-added services — innovation and lower costs.

Electric companies, third-party providers and electric companies in partnership with other companies all have important roles to play in developing and deploying these services. Today’s challenge is to ensure that the correct rules and regulations are in place to provide the greatest value for customers and to create a level playing field for all market participants.

As demonstrated throughout this chapter, today’s electric companies are already offering innovative value-added services to better serve customers — both alone and in partnership with other companies.



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2. Third-Party Providers' Perspective on Value-Added Electricity Services

By Ryan Katofsky, Benjamin Stafford and Danny Waggoner, Advanced Energy Economy^{30,31}

Introduction

The electricity sector is changing. Whether in restructured states or vertically integrated ones, new technologies are being integrated into the grid and installed behind

[T]he expectations of what the grid can deliver are changing.

customer meters, including grid-facing and customer-facing smart grid technologies, distributed generation, demand response, energy storage, energy efficiency and energy management. Notably, distributed energy resources (DERs)³² are putting pressure on the traditional utility business model, which is focused on providing a regulated rate of return on capital investment.

As DER deployment increases, the need for utilities to invest new capital into their systems may decrease. Yet these same DER technologies are creating value and form the basis for a range of new services to customers. In this sense, the electricity sector is no different from other industries, where technology and a data-rich environment are transforming the customer experience, as well as how products are made and how services are delivered. Arguably, the electricity sector has lagged far behind other sectors. As regulators and policymakers increasingly recognize this, and utilities acknowledge the need to modernize how they do business, this opens up the possibility of meaningful reform and the creation of a more consumer-centric, reliable, clean and affordable electricity system.

Said another way, the expectations of what the grid can deliver are changing (see Figure 2-1). While we still need to maintain the core attributes that have guided the industry for decades, new attributes are gaining in importance, even as a range of pressures needs to be addressed.

³⁰ The authors thank their colleagues, Lisa Frantzis, Hannah Polikov and Coley Girouard, for their support in preparing this chapter of the report.

³¹ Advanced Energy Economy (AEE) is a national association of business leaders who are making the global energy system more secure, clean and affordable. Advanced energy encompasses a broad range of products and services that constitute the best available technologies for meeting energy needs today and tomorrow. Among these are energy efficiency, demand response, energy storage, natural gas electric generation, solar, wind, hydro, nuclear, electric vehicles, biofuels and smart grid. Advanced energy is all the innovations that make the energy we use more secure, clean and affordable. AEE is comprised of a diverse membership. As such, the information contained herein will represent the position of many, but not all, of AEE's members.

³² We define DERs broadly to include distributed generation of all types, demand response, energy efficiency, energy storage, electric vehicles and the associated electric vehicle supply equipment, and microgrids.



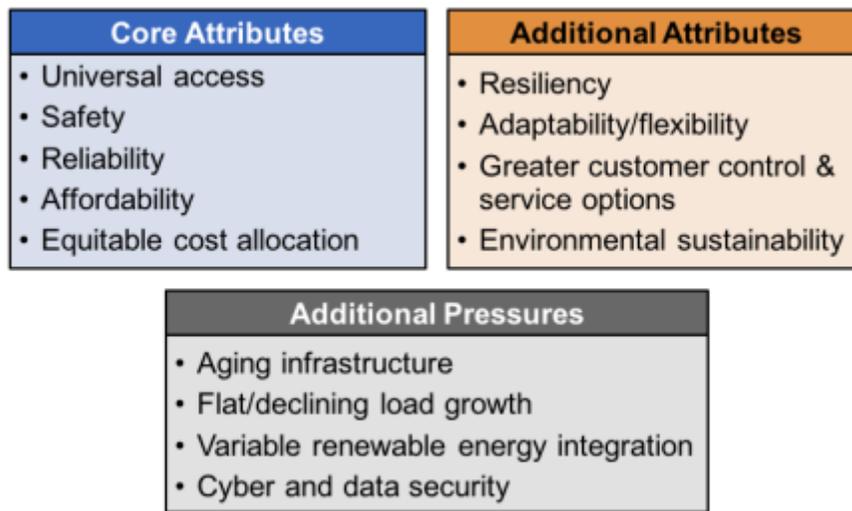


Figure 2-1. Core and emerging attributes of the grid

The drivers of change can be grouped broadly into technology, market and policy categories.

Technology developments include:

- Deployment of smart grid technologies, products and services, including both grid-facing and customer-facing technologies, as well as the increasing use of customer-facing apps and software platforms for managing DER and energy usage
- Rising deployment and cost-effectiveness of distributed generation
- Greater adoption of energy management technologies, including energy efficiency and demand response
- Growing adoption of plug-in electric vehicles and battery energy storage
- Deployment of microgrids, which combine some or all of the above technologies to meet customer and system needs
- The rise of big data, analytics and connected devices to optimize energy usage and engage and empower customers to have greater control over energy use and costs
- Expanded use of large-scale advanced energy technologies, including renewable resources

Market developments include:

- Expectations for a more resilient system, including rapid outage restoration and better information and communication about outages, especially during severe weather events
- Consumer demand for environmentally sustainable energy options



- A decoupling of demand growth from gross domestic product growth as gains in energy efficiency keep demand flat
- Higher expectations for reliability and power quality driven by the digital economy and the proliferation of and dependence on electronic devices
- A desire for greater visibility and control of energy use and costs, including rising interest in customer-sited options, paving a way for the “empowered customer”
- Growth in energy products and services provided directly to customers by third parties, and the ability of customers and third parties to offer services and system resources to the utility as an alternative to traditional utility investments
- A blurring of the boundaries of what defines the electricity industry, as a growing number of third parties are tech-industry players that have found that energy is a new business opportunity for them
- Heightened awareness of cyber security and threats, on both the utility and customer side of the meter
- The availability of abundant low-cost natural gas

The competition that is enabled by new technology is good for energy markets in that it has the potential to drive cost reductions and spur innovation that lead to a better customer experience and greater value for customers. It also provides opportunities for private investment to complement regulated utility investment. This can help to manage customer risks at a time when many electricity systems are in need of significant renewal and modernization.

Reinforcing these technology and market developments are policies that also serve as important drivers of deployment of advanced energy technologies, beneficial electrification of transport, and broad efforts to reduce the environmental impact of energy use and modernize our electricity infrastructure to bring it into the digital age. As a result, the energy infrastructure and markets of the future will be more complex, include a greater number and variety of actors, and present both technical and business challenges. Technical challenges include managing two-way power flows over the electricity distribution system and integrating a much larger number of interconnected devices. Business challenges focus on long-term viability of the current utility business model that is built broadly around increasing capital deployment and rising energy sales.³³ This business model, that has served us well for many decades, is now in need of change.

The competition that is enabled by new technology is good for energy markets in that it has the potential to drive cost reductions and spur innovation that lead to a better customer experience and greater value for customers. It also provides opportunities for private investment to complement regulated utility investment. This can help to manage customer risks at a time

³³ Revenue decoupling, as described later in this chapter, can partially mitigate this issue.



when many electricity systems are in need of significant renewal and modernization. Set against a backdrop of rising DER deployment and flat to declining load growth, taking a business-as-usual approach could lead to unsustainable rate increases for customers. Regulated utilities, whether vertically integrated or distribution only, may therefore need new revenue and earnings opportunities that leverage DERs and other advanced technologies that are consistent with the ongoing role of the utility in providing safe, affordable, equitable and universal service.

The subject of value-added services, while seemingly narrow, actually goes to the heart of foundational issues such as the appropriate roles for utilities and third-party service providers in the electricity system of the future, and the policy and regulatory changes needed to address the fact that technology is blurring the lines between traditional utility monopoly services and competitive services. We do not view these issues in black and white terms and also recognize that as technology evolves, so must these roles. Our collective challenge is to strike the right balance that addresses the needs of utilities, competitive suppliers, customers and other stakeholders. The framework laid out here is meant to serve as a guide for all stakeholders that can then be adapted to the unique circumstances in each state.

If managed successfully, the changes occurring in the electricity sector present opportunities for greater customer choices and engagement, the creation of a more efficient and resilient energy system, and opportunities for utilities to embrace new business concepts that will sustain them in the decades to come.

This chapter of the report provides the advanced energy industry's perspective on the provision of value-added services in the context of the evolving electricity system.³⁴ First, we provide some background on industry change and drivers. Next, we define basic and value-added services as a necessary step for understanding stakeholder roles in a modern grid. We then lay out a framework for discussing the appropriate roles for utilities and third-party providers associated with the provision of these services. Lastly, we discuss regulatory changes that can support the transition to services provided by and through a modern grid.

³⁴ Advanced Energy Economy (AEE) is comprised of a diverse membership. As such, the information contained herein will represent the position of many, but not all, of AEE's members.



1. What new value-added services does grid modernization enable, and what are the appropriate roles for utilities and third-party service providers? Should utilities directly compete with competitive providers of new value-added services or provide new platforms and procurement mechanisms to enable third-party services?

Definitions of Basic and Value-Added Services

In order to have a discussion of value-added services, it is first necessary to define what is meant by the term. We distinguish between the services that a regulated utility is obligated to provide and be compensated for by law, and all other services, including those that may be more appropriately provided through the competitive marketplace. While we offer various examples throughout this report, the definitions of basic and value-added services must be general enough to account for the fact that as technology evolves, there will be new basic and value-added services that we cannot yet contemplate. We also recognize that the delineation between basic and value-added services is likely to vary across jurisdictions, as regulators and stakeholders continually adjust their thinking in this dynamic environment.

At the highest level, we distinguish between *basic* and *value-added* services as follows:

Basic services are those that the regulated utility provides as it carries out its monopoly functions, as generally defined in statute and in regulations promulgated by public utility commissions and other regulatory bodies. These services are provided to all customers, with costs recovered from all customers. This includes services provided by the utility as it implements programs mandated by policy, such as energy efficiency programs. In this case, not all customers may participate in the programs, but the service is made available to all customers. Moreover, because energy efficiency is often a least-cost resource for meeting electricity needs, it is reasonable to treat cost recovery for energy efficiency programs similarly to cost recovery for other (supply side) resources. Additionally, some basic services are differentiated among customer segments — e.g., large commercial and industrial customers have different account management services and call center services than small commercial customers. This ability to offer different “flavors” of basic service is expected to become more important in the future.

As the role of the utility evolves and technology advances, some basic services also could be provided by the regulated utility to third-party companies as part of the utility role in animating the market.

As the role of the utility evolves and technology advances, some basic services also could be provided by the regulated utility to third-party companies as part of the utility role in animating the market.³⁵ As an

³⁵ The costs associated with the provision of basic services to third parties could be allocated differently than for basic services provided to utility customers.



example, utilities could provide smart meter data in various formats to third parties.³⁶ In this case, the provision of such data is enabled because the utility has deployed advanced metering infrastructure (AMI). While the provision of the data may generate costs for

Value-added services are optional, enhanced services, whether provided by utilities or the competitive market.

the utility, these costs are generally small compared to the costs already incurred by the utilities in deploying AMI and collecting the data – costs that customers already pay for through basic service rates. Given that the benefits of making the data available accrue to all customers, any incremental costs associated with making the data available should be borne by all ratepayers. As described below in the definition of value-added services, this does not preclude the option of utilities charging for enhanced data services where individual customers or companies are making requests for nonstandard or otherwise customized data or analysis. Nevertheless, we view the provision of these data as a new basic service that is enabled by AMI.³⁷

Moreover, as advanced technology is deployed, an expanded set of services related to understanding energy use and costs may be best viewed as new basic services — for example, utilities offering guidance on selecting rate plans. Similarly, new communications from the utility, such as information about impending severe weather events, might be best viewed as new basic services within the context of a modernized utility system.

Value-added services are optional, enhanced services, whether provided by utilities or the competitive market. Customers would choose to receive such services as an addition to basic service. Some of these value-added services may be monopoly functions requiring specific customer fees to cover their costs, whereas others will not be. Some value-added services may be enabled by virtue of the utility’s monopoly position, whereas others could readily be provided by the competitive market. As with some basic services, some value-added services also can be provided by the utility to third-party companies — for example, as part of the role of the utility in animating a competitive market for energy services to customers.

As a general principle, our view is that for value-added services provided by the regulated utility, the associated costs should not be included in basic service rates. Rather, it seems prudent that only those customers receiving those services from the utility should pay for them.

Nevertheless, there may be important exceptions to this general principle on cost recovery, as

³⁶ This example assumes that the utility is providing data with a level of granularity sufficient to describe all of the customer’s billing determinants. Some customers — for example, those participating in wholesale market programs — may require additional granularity and lower latency, which may incur additional costs to provide. These additional data services could be defined as value-added rather than basic.

³⁷ In this example, it is also assumed that the AMI deployment is for the entire utility service territory. If the utility is only deploying advanced metering functionality to selected customers who request it, then these costs would not be borne by all customers.



we discuss further in the section titled, *Circumstances under which regulated utilities could provide value-added services*.

To help illustrate the types of value-added services a utility may provide, consider the example of enhanced analysis of meter data to customers or third parties. These analytical services may not be defined by the public utility commission as part of basic services, as might be the case for the utility providing raw meter data or providing basic usage analysis on customer bills to encourage energy efficiency or as part of an audit offered through an energy efficiency program. In that case, the cost of providing this enhanced analysis would not be recovered through basic service rates but rather would be charged to those customers or companies that request it. Another example of a value-added service could be DER scheduling and dispatch, enabled by the utility's unique role as the operator of the distribution system/platform.

In contrast, an example of a value-added service that is usually provided by third parties is the sale, financing, installation and operation of onsite distributed generation. Another is when third parties manage customer participation in wholesale-market demand response programs.

Interestingly, the above examples of utility-provided value-added services (enhanced analysis of meter data and DER scheduling and dispatch) also could be provided by third parties, as long as those third parties are given timely access to the same data that the utilities use to offer these services, and as long as other conditions are imposed to ensure a level playing field.³⁸ As discussed further below, there are several considerations as to which entities can and should be providing these value-added services.

Finally, we note that many value-added services are created or enabled by DER technologies. While we are mindful of this overlap between value-added services and DERs, the framework presented here is meant to be broadly applicable to all value-added services. Also, these same DER technologies can be used to provide basic services, whether deployed by the utility (e.g., energy storage deployed at a substation to relieve a distribution constraint) or deployed by third parties and then used to sell services to the utility (e.g., energy storage deployed behind a customer meter or as part of a community-shared solar project and used to sell demand reductions to a utility demand response program to address that same distribution constraint). This raises additional considerations, discussed further below, with respect to investments made by the utility in technologies that are used to provide both basic and value-added services, and the appropriate way to price these services.

³⁸ These conditions could include preventing utilities from reducing customer acquisition costs by marketing to known customers, as well as contractual restrictions, such as preventing utilities from bundling value-added services with basic services.



Emerging roles for utilities and third-party providers

Using this essential differentiation between basic and value-added services, we can now begin a discussion of appropriate roles and incentives for service provision. Jurisdictions vary in defining what specific services are considered basic services and in delineating specific roles for utilities and other service providers. Jurisdictions that have pursued electricity restructuring have generally aimed to separate the functions of a natural monopoly (the regulated utility) from those functions which can be met by other firms. Thus, the roles created through a given state's approach to retail competition can imply or impose specific definitions of basic and value-added services.

In some jurisdictions, opportunities to compete for the provision of value-added services may exclude regulated utilities, while allowing an unregulated affiliate of the utility to compete. The delineation between basic and value-added services in vertically integrated states is likely to differ from that applied in restructured states, owing to the fact that utilities can still own generation assets and generally retain exclusive rights to sell electricity at retail. Thus, in vertically integrated markets, the ability of third parties to offer value-added services directly to customers is generally more limited. For example, leasing of rooftop solar power systems, a popular option for consumers, is prohibited where it violates state statute with respect to retail sale of electricity by a company other than the utility. In states with retail competition, this limitation does not exist. Given the rapid pace of change within the electricity sector, and the ability of both utilities and third parties to offer a range of new services, now is an appropriate time for thoughtful reconsideration of appropriate roles for utilities and non-utility companies.

In considering the appropriate roles for regulated utilities and unregulated companies, our primary concern is that regulated utilities should not be competing directly with third-party providers, particularly in the provision of value-added services where these services are readily provided by the competitive market. Utilities have a built-in advantage resulting from their monopoly position. This includes lower cost of capital through reliance on ratepayers, existing customer relationships, and superior access to information about their customers and their network.

In considering the appropriate roles for regulated utilities and unregulated companies, our primary concern is that regulated utilities should not be competing directly with third-party providers, particularly in the provision of value-added services where these services are readily provided by the competitive market.

Given these built-in advantages, some may ask, "Why should we not allow utilities to offer these services if they can do so more cost-effectively?" The same question could be asked of other capital-intensive industries, where having one provider could potentially lower the cost of service, but where these industries do not exhibit the same natural monopoly characteristics



as electricity delivery. Take mobile phone networks, for example. In these networks, providers must duplicate large amounts of infrastructure to compete across the country. Nevertheless, competition, where it is possible, drives companies to lower costs, improve service, and develop new technologies and business models to gain a competitive edge in a way that regulation cannot fully reproduce. Policymakers have prevented mergers to ensure this essential competition, judging that competition benefits customers in these cases more than the economic efficiencies of having one supplier, wherein an intensive regulatory approach is then required to ensure that customers share in the monopoly company's efficiency gains.

Thus, unless there are compelling reasons to allow otherwise, electricity-related services which can be competitive should be competitive. As an example, a recent report compared retail pricing in competitive and regulated areas of Texas. The findings show that retail prices in competitive market areas better reflected wholesale prices and have moved favorably for consumers relative to wholesale prices. This suggests that competitive retail markets have delivered cost reductions consistent with competitive electricity service providers reducing their marginal costs.³⁹

[U]nless there are compelling reasons to allow otherwise, electricity-related services which can be competitive should be competitive.

With that said, utilities have an essential role to play in the provision of value added services — and should be rewarded for doing so — be it the facilitation of the development of a competitive market for these services (including provision of value-added services to third parties) or the direct provision of value-added services where such a competitive market does not exist. Still, for markets to function effectively, policymakers and regulators should continue to clearly define the boundary between utility and non-utility functions. This will be an ongoing process as new technologies and service options continue to be developed. As it relates specifically to value-added services, regulators should consider implementing a formal but efficient process for considering new services and whether they are appropriate for regulated utilities to offer or whether they should be left to the competitive market.

In line with this, we are broadly supportive of the utility role evolving to that of a platform provider and operator, where the platform is comprised of the physical grid and an increasingly transactive marketplace. In New York, a restructured state, distribution utilities already are beginning to make this transition under the changes being implemented in the Reforming the Energy Vision (REV) proceeding.⁴⁰ In this case, the utility continues in its role to provide reliable, affordable and safe electricity delivery, but also makes investments in the platform to expand its capabilities to support a growing suite of products and services, with the primary goal of increasing customer uptake of third-party services, particularly those related to DERs. In this

³⁹ Hartley, Medlock, and Jankovska (June 2017).

⁴⁰ State of New York Public Service Commission (February 26, 2015).



model, rather than having regulators dictate exactly what types of value-added services utilities will offer, utilities instead have the opportunity to propose new services for approval by the state public utility commission, provided that they meet the objectives of the regulatory reforms. In the case of New York’s REV proceeding, these services are generally aimed at enabling the DER marketplace. In its Track 2 Order, the New York Public Service Commission (PSC) wrote the following with respect to the utility transitioning to what it terms the Distributed System Platform (DSP):

The expanded role of utilities is marked by new obligations and opportunities to facilitate the multi-directional transactive retail electricity market. This role includes eliminating barriers that can impede the adoption of cost-effective DER by end-use consumers, as well as supplying the information and price signals that provide fair value for these resources as part of grid operations. The utility in its DSP function will provide these services as an expansion of its existing obligation to provide reliable, cost-effective and clean power resources.⁴¹

Thus, the platform role of the utility is primarily that of a market facilitator and operator. As part of this, the New York PSC further noted two types of services where the utility could have the opportunity to earn revenues, called Platform Service Revenues, from the operation of this platform. The first would be services where “...the underlying product or service is inherently a monopoly function that cannot effectively be performed by non-utility parties.⁴² The other is

These criteria further emphasize the market facilitation/development role of the utility as a platform provider, seek to prevent situations where utilities are in direct competition with non-utility providers ... and limit the utility using its monopoly status to achieve an unfair competitive advantage.

what the PSC termed “competitive” services. In that case, the PSC set forth a set of criteria to define the circumstances under which the utility would be able to provide competitive platform-based services. These are:

- (a) whether the service facilitates the growth and operation of markets;
- (b) whether there is already a third-party market for the service that adequately serves all sectors of the market;
- (c) whether utility economies of scale and/or existing utility expertise are likely to result in cost-effective stimulation of the market;
- (d) whether utility provision of the service is likely to prevent other providers from entering the market; and
- (e) the extent to which a utility has proposed placing shareholder funds at risk.⁴³

⁴¹ State of New York Public Service Commission (February 26, 2015), at 45–46.

⁴² Ibid, at 48.

⁴³ State of New York Public Service Commission (February 26, 2015), at 49–50.



These criteria further emphasize the market facilitation/development role of the utility as a platform provider, seek to prevent situations where utilities are in direct competition with non-utility providers, constrain the potential to achieve advantageous financing terms through shifting risk on to regulated revenues, and limit the utility using its monopoly status to achieve an unfair competitive advantage. Importantly, this approach puts the regulator in the role of making the determination on a case by case basis.

As an example, there may be justification for a particular form of utility involvement in value-added services that may increase opportunities for third parties and support development of competitive market activity in the future. Over time, as the market evolves, regulators may subsequently determine that the regulated utility is no longer the appropriate entity to provide that particular service and that only competitive suppliers should do so.

Other jurisdictions with restructured markets, such as Ohio and Rhode Island, are also beginning to explore a competitive platform structure.⁴⁴ California, while not directly pursuing the comprehensive regulatory and utility business model reforms that New York has, may be further along today than any state in developing the platform concept (at least as it relates to the grid as a physical platform) and making the types of customer and system data available to facilitate a robust market for third-party products and services. This is evident in the progress California utilities are making in providing frequently updated data on the hosting capacity of distribution circuits and also in the state's work several years ago to establish data sharing and data privacy standards for customer AMI meter data.⁴⁵

In jurisdictions with a vertically integrated structure, we believe a similar transition to a platform-type model can also occur.

In jurisdictions with a vertically integrated structure, we believe a similar transition to a platform-type model can also occur. The utility would make similar investments in its network as a delivery-only utility to enable more integration of DERs and the provision

of new services. But the utility could take a more direct role in service provision and coordination of procurement from third parties, consistent with the nature of the vertically integrated market, rather than establishing a more independent platform upon which multi-sided transactions can occur. Nevertheless, even under this model, regulated utilities should be encouraged to make the most out of the competitive market, with their financial incentives driven not just by increasing their own capital investment, but by performance against well-

⁴⁴ In addition to New York's *Reforming the Energy Vision* proceeding, see also Ohio's *PowerForward* initiative at <https://www.puco.ohio.gov/industry-information/industry-topics/powerforward/> and Rhode Island's *Power Sector Transformation Initiative* at http://www.ripuc.org/utilityinfo/electric/PST_home.html.

⁴⁵ California Public Utilities Commission (CPUC), Rulemaking R.08-12-009, Decision D.11-07-056 (July 28, 2011) and Application A.14-06-001 et al, Decision D.16-06-008 (June 9, 2016) on Data Access. CPUC Distribution Resource Plan Rulemaking R.14-08-013 and individual IOU distribution resource plan applications: A.15-07-002 (SCE), A.15-07-003 (SDG&E), and A.15-07-006 (PG&E).



defined metrics related to outcomes and customer benefits. Doing so will require some important regulatory changes, outlined in more detail under question 2 below.

Regardless of the market structure, it is reasonable to consider that value-added services based on technology deployed on the customer side of the meter should generally be the domain of the competitive market, subject to some specific exceptions as described below in the section titled, *Circumstances under which regulated utilities could provide value-added services*. This does not preclude the utility from engaging in revenue-producing activities that are connected to services delivered on customer premises, such as revenues from providing services that lower the cost of third-party DER deployment (including marketing and assistance in customer acquisition). Utility administration of energy efficiency and demand management programs are two prime examples, where the utility may establish and manage the program, usually in response to a policy directive, and provide rebates and financing (e.g., on-bill financing). Utilities may also control resources on the customer side of the meter, such as they do with direct load control programs for peak load management. However, AEE's view is that energy efficiency products and services themselves are best delivered by third parties, not only because they entail functions generally outside of the utility skill set, but more importantly because this is a market that does not have

monopoly characteristics, meaning that it is appropriate to use the competitive market for service delivery.

Massachusetts offers a good example of a state with a robust energy efficiency market where the roles of utilities and third

parties are well defined. Utilities collect energy efficiency funds from customers via a surcharge on utility bills, administer the overall program, and are given financial incentives if they achieve high levels of energy savings. Program execution, including the coordinated marketing across all electric and gas utilities through the MassSave brand, energy audits and energy efficiency deployment, are carried out by third parties (rather than utility personnel), essentially acting as contracted agents of the utilities, whether selected by the utility or the customer. There is also an ecosystem of independent contractors providing competitive energy efficiency services but leveraging the MassSave program. Utilities also can engage directly with customers (particularly larger customers) and other market actors to promote the program, provide information and provide customer contacts, but service delivery is left to non-utility companies. This model helps to address a market failure where there is a clear benefit to utility involvement — to help remove barriers to customers pursuing all cost-effective energy efficiency — but importantly does not put the regulated utility in competition with unregulated companies. Instead, utilities

[T]he utility could take a more direct role in service provision and coordination of procurement from third parties, consistent with the nature of the vertically integrated market, rather than establishing a more independent platform upon which multi-sided transactions can occur.



and third-party providers work together to achieve desirable policy goals and improved delivery of energy services to customers.

For products and services that are based on deployment of technology on the utility side of the meter, the situation is potentially more complex. Utilities should be able to deploy DERs on the utility side of the meter, subject to applicable generation ownership restrictions, in order to provide *basic*

services to customers. For instance, solar and energy storage at a substation can provide grid services and capacity that can defer or avoid expensive transmission or distribution system upgrades. The customer still receives the same service, but this is accomplished through different means. The utility also could deliver *value-added* services from equipment on the utility side of the meter,⁴⁶ such as enhanced levels of reliability and power quality from a battery at a substation. But the same result could be achieved through a purely competitive service where a battery is deployed behind the customer's meter. As we have articulated above, while the utility should be empowered to participate directly in behind-the-meter improvements where there are clear natural monopoly benefits, the policy preference should always be to build an infrastructure to leverage competitive markets wherever possible, including competitive procurements for the supply of DER solutions, even if owned by the utility.

[T]he policy preference should always be to build an infrastructure to leverage competitive markets wherever possible, including competitive procurements for the supply of DER solutions, even if owned by the utility.

[T]hird-party DER providers should be developing and implementing business strategies, products and services that support the utility while giving customers greater choices and control over their energy use and costs.

Additional considerations for distributed energy resources

There is significant overlap between the provision of value-added services and DERs. Under the current regulatory paradigm, utilities often view DERs and DER providers as a threat to their business. This can,

understandably, lead regulated utilities to move to slow DER deployment or to seek authorization to compete with unregulated entities in the DER market. Neither option is desirable. Instead, utilities and DER providers should be working toward common goals. Utilities should be facilitating greater DER deployment in furtherance of their core mission and to meet emerging customer needs and policy objectives. And the utility should financially benefit from doing so, such as through sharing in the financial success of a thriving competitive market, including new revenues from services offered to the market and through receiving rewards for providing increasing value to customers and meeting policy objectives. At the same time, third-

⁴⁶ In some cases, the same equipment used to provide basic services also can be used to provide value-added services. This issue is discussed further below.



party DER providers should be developing and implementing business strategies, products and services that support the utility while giving customers greater choices and control over their energy use and costs. If we can achieve this alignment between the interests of regulated utilities, third parties, customers and policymakers, we will get the most out of new technologies and achieve the transition to a modern grid more rapidly and with less disruption.

This suggests that the utility role should evolve to one of market facilitation/operation and DER *integration* (and not just DER *interconnection*). For example, some argue the case against utility DER ownership rather strongly, using rooftop solar as the example.⁴⁷ Rooftop solar, as well as the rapidly evolving market for community solar, both exhibit characteristics of well-functioning competitive markets. There are multiple providers (including national, regional and local companies) competing on price and other attributes, as well as different viable business models, including direct sales, leasing and loan products. Some companies have offerings that integrate different elements of the supply chain whereas others focus on just one aspect. Also, the barriers to entry are not particularly high. This is not to say that the distributed solar market is functioning perfectly everywhere, but rather that it is clear that a viable competitive market exists.

Assuming utilities evolve toward the role of a platform provider, the activities of DER companies, while fundamentally in the realm of the competitive market, can be shaped by the regulatory framework and price signals to support regulated utilities in planning and operations, while also meeting the evolving

What we should most be trying to avoid is regulated utilities and competitive suppliers competing head to head to provide the same value-added products and services to the same customers.

needs of customers. This is true whether these companies are operating as contracted agents of the utility, are providing services to the utility via a bilateral arrangement or a utility-administered program, or are responding to the price signals in advanced rate designs. For example, utilities can provide system information and price signals to DER providers on where to locate resources and when to generate in order to best support the grid. This applies whether in vertically integrated or restructured electricity markets, although the specific implementation will differ between them. What we should most be trying to avoid is regulated utilities and competitive suppliers competing head to head to provide the same value-added products and services to the same customers.

⁴⁷ Tong and Wellinghoff (May 11, 2015).



Circumstances under which regulated utilities could provide value-added services

We propose that the following criteria be used to determine when, and under what circumstances, the regulated utility be allowed to offer value-added services:

- Services to customers that are enabled by virtue of the utility's monopoly position where there is a clear benefit⁴⁸ from allowing the utility to offer the service, and for which there are no comparable services provided by third parties.
- Services to third parties designed to support the further development of an animated market for value-added services to customers by third parties.
- Services that address underserved segments of the market that could benefit from initial involvement by regulated utilities until a competitive market emerges. Utility involvement should be targeted to address the specific barriers that impede the development of a robust market within these specific segments. Such involvement should end once it has been determined that a competitive market exists.
- Demonstration of new technologies and business arrangements that have the potential to provide new benefits and efficiencies, in partnership with third parties, as part of a broader development effort into innovative solutions, such as increasing the penetration of DERs on utility distribution circuits without compromising reliability or power quality.

As states address the issue of value-added services, either separately or perhaps in the context of larger regulatory reform efforts, these criteria could form the basis for public utility commissions to open proceedings to gather input from a broad range of stakeholders, so that issues specific to that jurisdiction can be fleshed out further in a collaborative manner. There is no simple formula for applying these criteria. Rather, regulators will need to develop a process that has broad support from the stakeholders involved and ultimately use their judgment in making a determination, as they do in many other matters.

We offer four examples of where these criteria may be met in a particular jurisdiction. The first example is a utility offering low- and moderate-income customers a community solar product. Although there are companies that focus on this segment,⁴⁹ there does not yet exist the same robust competitive market as there is for solar energy more broadly, and these companies may be completely absent in some states. In that case, the public utility commission may make a determination that there is a benefit to utility involvement in offering this value-added service.

⁴⁸ Benefits may accrue to electricity customers or more broadly to society. While we have not specified further here what these benefits should be, we would expect utility commissions to apply a well-defined process for assessing benefits on a case by case basis. We also note that the existence of benefits from utility provision of value-added services is not the sole determinant of whether or not utilities should be providing those particular services.

⁴⁹ For example, GRID Alternatives (<https://www.gridalternatives.org>) provides no- to very low-cost solar power for low income families while providing workforce training and opportunities for volunteers.



A second example is the one given earlier in the definition of basic and value-added services, namely the provision of customized AMI meter data to third parties, or customized analysis of the data.

A third example is a vertically integrated utility offering a renewable energy tariff. This is particularly important for the growing number of corporations with sustainability goals that include renewable energy procurement targets that are located in these vertically integrated markets, because they cannot go to the competitive market to directly procure renewable energy.

[A] primary objective of utility involvement in the provision of value-added services should be to create the conditions under which a competitive market can be established.

A fourth example is electric vehicle charging infrastructure — specifically, the electric vehicle supply equipment (EVSE) used to charge the vehicle (as opposed to grid upgrades that are needed to support EV charging and provide grid benefits through smart charging). Although there are

business models for third-party ownership of EVSEs and the provision of charging services, in most jurisdictions this model is not yet viable due to the low level of penetration of EVs, unavailability of and access to convenient charging infrastructure, and a lack of standardization in networks and payment systems. This has led to the utilization rates of public EVSEs being too low currently to generate viable business opportunities. As a result, EV adoption is being hindered by a lack of charging infrastructure. Given the important public benefits of EV market growth, several states have enacted goals and policies to support more EV sales.⁵⁰ Wider EV deployment can also yield benefits to ratepayers.⁵¹ Thus, to support these goals and policies, a case can be made that utilities should be allowed to own EVSEs and provide charging services.⁵² This utility involvement could take various forms and ideally would also be carried out in conjunction with the use of other policy instruments.⁵³ This is why the California Public Utilities

⁵⁰ California Executive Order B-16-2012, set a target of putting 1.5 million zero-emission vehicles (ZEVs) on the roads in California by 2025. California SB 350 directed the state’s six IOUs to file applications for programs that “accelerate widespread transportation electrification.”

⁵¹ For example, see <http://www.mjbradley.com/reports/mjba-analyzes-state-wide-costs-and-benefits-plug-vehicles-five-northeast-and-mid-atlantic> for a summary of a series of reports that estimate net benefits for both ratepayers and society as a whole.

⁵² One could ask whether vehicle manufacturers should step up to build out EV charging infrastructure. This has occurred on a very limited scale to date. For example, Tesla has built out a network of fast charging stations, arguably because it was not willing to wait for the market to develop. However, as an industry, vehicle manufacturers are not in the business of building and owning charging stations and for companies with vehicle types other than EVs, they are able to sell those vehicles instead of EVs and have no real motivation to build out charging infrastructure when they could instead focus their resources on their core business of building vehicles.

⁵³ See Citizens Utility Board (2017).



Commission recently ruled that utility EVSE ownership is allowed and directed the state's three major investor-owned utilities to file plans to accelerate EVSE buildout.⁵⁴

Even though the above conditions may be met in these four examples, we reiterate that a primary objective of utility involvement in the provision of value-added services should be to create the conditions under which a competitive market can be established — for those value-added services that do not have monopoly characteristics. Thus, utility involvement should be targeted to addressing the specific conditions that are preventing the creation of a competitive market. The outcome should not be simply to cede the market to the regulated utility unless the service truly has monopoly characteristics. In the EVSE example, direct utility involvement would end if and when the EV market has grown to the point where it supports competitive EVSE business models. Even if utility involvement were to end, utilities should, of course, be afforded the opportunity to fully recover the costs and earn a reasonable return associated with their investments.

As public utility commissions work to establish the regulatory framework needed to facilitate appropriate utility involvement in the provision of value-added services, they should include procedures that (1) provide for a reasonable process by which utilities can propose new value-added services and (2) ensure periodic review of this utility involvement. These reviews would be used to evaluate the effectiveness of the utility offerings and whether circumstances have changed that would warrant modification of the service offerings or the ending of the involvement of the utility in the provision of that particular service.

Unregulated Affiliates

We generally view unregulated affiliates of the regulated utility similarly to unaffiliated third parties. However, if the unregulated affiliate is allowed to participate within the regulated utility's service territory, we recommend that the following code of conduct rules be established and enforced to ensure that the unregulated affiliate does not unfairly benefit from its relationship with the regulated utility affiliate or parent company:

- Unregulated affiliates should be prohibited from using the regulated utility name and resources.
- Access to the utility's customer and operational data should be available to all competitive service providers under the same terms.
- Joint marketing and advertising by the utility and its affiliate should be prohibited, unless this option is available to any third party under the same terms.
- Personnel practices should preclude actions that could convey an unfair market advantage (e.g., revolving door transfers of personnel between regulated and unregulated affiliates).

⁵⁴ California Public Utilities Commission (CPUC) Application A.15-02-009, Decision D.16-12-065; Application A.14-04-014, Decision D.16-01-045; and Application A.14-10-014, Decision D.16-01-023. CPUC Application A.17-01-020 et al.



- Regulators should have the ability to audit the financial and accounting records of the unregulated affiliate if and when compliance concerns arise.

To further ensure that the unregulated utility affiliate does not have an unfair competitive advantage, we also recommend that regulators increase their oversight and consider establishing an ombudsman for third-party providers. In particular, smaller companies with limited resources to effectively address market power concerns would benefit from this type of support.

There is also the issue of whether unregulated affiliates should be allowed to bid on procurements issued by the regulated utility. Assuming that proper codes of conduct are in place and enforced, the argument can be made that unregulated affiliates should be allowed to bid. Conversely, some might argue that even with the best of intentions and proper enforcement of codes of conduct, it would be nearly impossible to create a truly level playing field and, therefore, unregulated affiliates should simply not be allowed to participate in such solicitations. Assuming that they are allowed to participate, we recommend using an independent entity to select winning bids.

2. What policy and regulatory changes may be needed in the face of increasing competition for electricity services from third-party providers?

Policy and regulatory changes that will be needed

The approach described above will only be successful if a number of additional changes are made that create an environment conducive to technology and business model innovation. We believe that such an environment will involve increasing collaboration and new business relationships between utilities and third parties. This will require that the right incentives, consistent with the emerging roles of utilities and third parties, are put in place. This includes a shift in financial incentives that gives utilities greater flexibility and options for revenue and earnings as they transition and evolve away from the traditional cost of service regulatory model that is based primarily on capital investment. This does not mean that regulated capital investment will not be needed or that cost of service regulation will disappear, but rather that capital investment should not be the primary means of driving utility earnings. This will better support the utility as DERs and customer- and third-party-provided services begin to offset new capital investments. The changes below are, in part, designed to establish a regulatory paradigm and financial incentives where regulated utilities are indifferent between themselves or non-utility companies owning DERs, and where the utilities are incented to effectively integrate all DERs regardless of ownership.

While the following options are not all directly related to the provision of value-added services, we view them as supporting the creation of an environment where value-added services can flourish, and where utilities are more likely to collaborate and contract with third parties, rather than try to compete with them.



Revenue decoupling. Mitigating the incentive for utilities to sell more electricity to drive up revenues can be accomplished by instituting revenue decoupling. Under this ratemaking mechanism, if actual electricity sales fall below or above the projections upon which rates were set, rates are adjusted up or down (for example, annually), to address the revenue shortfall or surplus, respectively. While revenue decoupling does not provide an incentive for utilities to take certain actions, it is an important foundational change that can support other ratemaking and regulatory reforms. Numerous states have implemented revenue decoupling.⁵⁵

Performance-based regulation (PBR). PBR rewards utilities for achieving well-defined, policy-driven outcomes that are not necessarily tied to capital investment. By rewarding outcomes instead of inputs, PBR better aligns the behavior and financial interests of regulated utilities with public interest objectives and consumer benefits. For example, metrics associated with financial incentives can be developed for energy efficiency deployment, peak load reduction, customer engagement and DER deployment, among others. While there are numerous benefits of PBR over traditional cost of service regulation, in the context of this report on value-added services, PBR can offer utilities earnings opportunities on new services that may not be tied to capital investment, as well as for achieving outcomes associated with the growth of value-added services offered by third parties.⁵⁶ Examples of PBR include the United Kingdom’s “RIIO” model and the Massachusetts energy efficiency program described above, which is a good example of a successful programmatic implementation.⁵⁷

New York also is in the process of implementing PBR as an overlay to cost of service regulation, creating the opportunity for utilities to earn up to 100 basis points of additional returns for meeting certain metrics. Known as Earnings Adjustment Mechanisms, their success is yet to be determined, as they are still being implemented. The intent is to use these mechanisms in part to foster a more animated market for third-party services in furtherance of New York’s goals in its REV proceeding.

Optimizing incentives for capital expenditures and operating expenses. Where appropriate, allowing utilities to earn a return on operating expenses (opex) for services that cost-effectively replace capital expenditures (capex) can be an important incentive for the development of new service-based options. This effectively allows utilities to share in the savings to customers generated from more cost-effective, service-based options. Software-as-a-service (SaaS) is a prime example. Many industries have chosen to use SaaS as a more cost-effective, secure option to owning and maintaining their own IT hardware and systems. Yet utilities are discouraged from doing so, despite the clear benefit, because they earn returns on IT hardware and capitalized software investments but not on SaaS contract payments, which are

⁵⁵ For example, see <https://www.c2es.org/us-states-regions/policy-maps/decoupling>.

⁵⁶ For a more thorough review of PBR, see AEE Institute (March 2017).

⁵⁷ More examples of PBR combined with multiyear rate plans can be found in Lowry, Deason, Makos, and Schwartz (July 2017).



treated as operating expenses. Recently, the New York PSC’s Track 2 order clarified that under existing accounting rules, utilities could capitalize the unamortized portions of prepaid SaaS contracts, effectively allowing them to earn a return on SaaS.⁵⁸

Broader application of this principle would benefit the development of more service options for customers and third parties, as well as utilities. The SaaS example can be logically extended to more traditional utility “poles and wires” investments. Various forms of non-wires alternatives (NWA) rely on services that, in many cases, can effectively replace utility capital expenditures. Consider the case where a distribution transformer is reaching its capacity limits due to load growth. Instead of replacing the transformer, the utility could contract for dispatch rights on a battery owned by a customer during the summer peak demand hours. The customer can make use of the battery during the other hours for energy arbitrage, enhanced reliability and demand charge savings. This allows the utility to avoid purchasing an expensive transformer, in essence replacing that equipment and capital investment with a service contract for dispatch rights. The same scenario is applicable to a contract with a demand response provider, which can pay its customers to reduce peak demand and offset the need for the new transformer investment. Creating incentives for utilities to seek out these types of solutions, where they are more cost effective,⁵⁹ should be encouraged.

Platform Service Revenues. This concept, currently exemplified by the New York REV proceeding, would establish opportunities for utilities to propose, develop and offer new basic and value-added services based on operating the grid as a platform. While we propose that the pricing for these services be cost-based, the revenue collected would not be related to traditional revenue associated with the rate base.⁶⁰ The types of value-added services that utilities could offer would need to be consistent with the foregoing discussion of the conditions under which they could offer value-added services. Such services could, for example, be focused on facilitating development of a robust competitive market.

Shared savings mechanisms. This approach grants the utility a share of the estimated net benefits from implementing solutions that result in customer savings. Normally, such actions would simply lead to lower utility revenue and earnings. Shared savings mechanisms can counteract this utility disincentive. For example, many of the benefits of utility-run energy efficiency programs flow to participating customers. Some of the benefits may be from the indirect impact of energy efficiency on wholesale energy and capacity market prices, and others from incremental savings from deferred or avoided distribution system investments. Allocating

⁵⁸ New York Public Service Commission (May 19, 2016) at 104.

⁵⁹ We use the term “cost effective” in the context of a comprehensive benefit-cost analysis framework that takes into consideration all the various policy objectives of a jurisdiction, including societal benefits. So, for example, if emissions reduction is a stated objective, its value can be included in the benefit-cost analysis comparing traditional utility solutions and third-party solutions.

⁶⁰ Rate base is “The net investment of a utility in property that is used to serve the public. This includes the original cost net of depreciation, adjusted by working capital, deferred taxes, and various regulatory assets.” See [Lazar \(March 1, 2011\)](#).



some of the net benefits to the utility via a shared savings model better aligns the interests of the utility and the customer and state goals.

A successful evolution of the market will also benefit from:

- Timely access to granular data for customers and their authorized third parties. This includes customer data from AMI as well as system data that can help third parties develop product and service offerings to retail customers and utilities, as well as having utilities develop hosting capacity maps that are updated regularly.⁶¹
- Rate design options for customers that fairly and fully compensate DERs and that send more precise price signals in time and place for DER deployment.
- New utility planning processes that recognize the changing roles outlined above and that leverage customer and third-party-owned resources. Specifically, these processes should be more transparent and involve a range of stakeholders. Utility commissions should require utilities to implement integrated distribution system planning processes that will facilitate new business and operational models.
- Improved, streamlined interconnection processes and higher size limits for standard interconnection for DERs.
- Codes of conduct for utilities and their unregulated affiliates, as described above.
- Requirements for utilities to evaluate whether solutions/services from third parties offer better value before making their own investments.
- Well-designed demonstration programs that allow utilities to test new services that are appropriate to be offered by utilities.

Regulators can develop criteria to decide what types of demonstrations are suitable. Such demonstrations should be separate and distinct from pure research and development activities undertaken by utilities.

3. How should regulators address utility costs for new value-added services, considering customers who do not participate in these offerings?

The manner in which different types of utility costs are recovered should be consistent with the foregoing discussion. When the utility makes what may be deemed as foundational investments, such as in AMI and other grid modernization technologies, these should be subject to cost of service regulation. New basic services that are

When the utility makes what may be deemed as foundational investments, such as in AMI and other grid modernization technologies, these should be subject to cost of service regulation.

⁶¹ “Hosting capacity analysis is used to establish a baseline of the maximum amount of DERs, including portfolios of DERs, an existing distribution grid (feeder through substation) can accommodate safely and reliably without requiring infrastructure upgrades.” See ICF International (August 2016).



enabled by these new investments should be handled in the same manner as current basic services. Of course, these investments should be subject to a robust benefit-cost analysis, and the potential to offer both new basic and value-added services (whether by the utility or third parties) should be part of the business case for making these investments. For example, such investments could lead to greater energy efficiency deployment (a basic service) and more distributed generation being installed (a value-added service).

Where the utility develops and offers value-added services, whether to customers or to third parties, our view is that the fees for those services should be cost-based, with a regulated rate of return. The utility should neither subsidize the cost of these services, nor earn outsized profits on them.

Where the utility develops and offers value-added services, whether to customers or to third parties, our view is that the fees for those services should be cost-based, with a regulated rate of return. The utility should neither subsidize the cost of these services, nor earn outsized profits on them. Alternative methods of pricing are

difficult to establish when there is only one provider and there is no competitive market to determine a price. Of course, pricing guidelines should be considered in light of the broader ratemaking approach that governs the utility's revenues.

Since these rate-based assets may enable both basic and value-added services, care must be taken in the pricing of any value-added services offered by the regulated utility that uses these assets, especially if these services can also be provided by the competitive market. Specifically, because the utility is recovering the costs for these capital investments in its rate base, the utility should not be able to subsidize its own provision of value-added services.

Thus, pricing of the value-added service should reflect the value of the contribution coming from the capital investment, with the proceeds going to offset basic service rates. Said another way, when utilities are providing value-added services that could be provided by third parties, they should do so under the same commercial terms

[W]hen utilities are providing value-added services that could be provided by third parties, they should do so under the same commercial terms as third parties.

as third parties. This ensures that: (1) customers procuring value-added services from the utility are paying fairly for those services, (2) ratepayers as a whole are not subsidizing those same services, and (3) competitive providers are not unfairly disadvantaged. Any revenues from the value-added service that are above the cost of the use of the rate-based assets can be retained by the utility.



For states that decide to transition to a grid-as-a-platform model, the utility making investments in the platform runs the risk that it will drive rates higher for all, whereas customers may benefit unevenly based on their desire or ability to use the platform to varying degrees. That is why such investments should be subject to a comprehensive benefit-cost analysis and business case, to ensure that the expected benefits outweigh the costs. The example of energy efficiency programs fits here, as does AMI deployment.

[T]he utility making investments in the platform runs the risk that it will drive rates higher for all, whereas customers may benefit unevenly based on their desire or ability to use the platform to varying degrees.

It also may be appropriate to consider ways to divide costs between the utility's rate base and users of the platform, based on an assessment of which benefits flow generally

to all customers and which to those active users. However, since this is likely to be complicated and subject to a range of assumptions, it may simply be preferable to take the approach outlined above whereby fees collected for use of the platform would offset the utility's traditional revenue requirement. This recognizes the value of the utility as the owner/operator of the platform that is meant to provide benefits to all customers, while allowing certain

customers to avail themselves of additional services, should they desire to do so.

[T]here may be important exceptions to the general principle that the costs of utility-offered value-added services be paid for only by the customers that use those services. That would be the case where the utility is authorized to provide a value-added service that has important societal benefits and the utility involvement is to help overcome market barriers or market failures and where there is currently no viable competitive market.

Finally, we believe that there may be important exceptions to the general principle that the costs of utility-offered value-added services be paid for only by the customers that use those services. That would be the case where the utility is authorized to provide a value-added service that has important societal benefits and the utility involvement is to help overcome market barriers or market failures and

where there is currently no viable competitive market. In that case, one key benefit of utility involvement is the ability to socialize costs across all customers to help reduce the cost of the service. The example given earlier of utility ownership of EVSEs is one where a principle benefit of utility ownership is to reduce costs and make EV charging available because the business model in which only users pay for the infrastructure is not yet viable. In that example, user fees would still be collected, but would not be expected to fully cover the cost of the investment.



This approach was the one adopted by the California Public Utilities Commission when it ruled to allow utility ownership of plug-in EV (PEV) charging infrastructure, noting that these situations should be evaluated on a case by case basis:

We ... endorse an expanded role for utility activity in developing and supporting PEV charging infrastructure. However, in doing so, we decline to prescriptively determine the appropriate level of utility activity at this time. Instead, we will evaluate utility proposals on a case-specific basis.... This decision reaffirms the balancing test applied in D.11-07-029, that the benefits of utility ownership of PEV charging infrastructure must be balanced against the competitive limitation that may result from that ownership.⁶²

Additionally, utility demonstration projects have been key to testing new technologies and driving innovation in transmission and distribution technologies. As new value-added services are developed, utilities will need to be able to test them out with customers and third parties in order to determine whether they have merit, and should be able to recover reasonable costs associated with the demonstrations regardless of the outcome. The total costs allocated to such demonstrations should be predefined so as to limit the ratepayer impact. Where possible, the utility could work with third-party companies that may be interested in using the new service, and they could co-fund a demonstration.

4. What policy and regulatory approaches best balance promoting innovation with consumer protection?

Encouraging innovation while protecting customers

We believe that the overall framework we have articulated above will encourage innovation, while utilities continue in their essential role of providing safe, reliable and affordable service to customers. This, in itself, should afford a large measure of consumer protection. With that said, competition is the main driving force for innovation in the economy. Maintaining strong competition for services is the best way for regulators to ensure innovation, as third parties will need to continue to provide ongoing improvements in order to stay ahead of their competitors. Transitioning to a regulatory framework that rewards utilities for specific outcomes while giving them flexibility to achieve those outcomes will also support a more innovative electricity system overall.

Also important to the success of the value-added services market is that consumers have confidence in the market and are willing to engage with third parties in new ways. There already exists a wide array of local, state and federal consumer protections that govern how these third-party providers must treat customers. In addition, industry associations have developed guidelines for their members to follow, such as the Solar Energy Industries Association's Solar

⁶² California Public Utilities Commission (CPUC) (December 18, 2014).



Business Code. The North American Energy Standards Board also has promulgated a range of standards for companies to follow — for example, data privacy standards for third parties to access smart meter data. Existing state energy programs are also instructive here. For example, where states have solar energy programs, participating solar installers must abide by codes of conduct that are focused on protecting consumers and building consumer confidence.⁶³

Moreover, when third parties act as contracted agents of utilities, they are subject to the terms of their business relationship, as well as the rules that govern the behavior of the utility, since they are acting on behalf of the utility. Similarly, companies that directly contract with utilities to

As consumers continue to receive additional electricity-related services from third parties, there may be the temptation to increase oversight, but it will be important for regulators to allow the competitive market to work.

provide services, or do so under an approved tariff, are subject to the terms of those contracts and tariffs. Nevertheless, regulators should monitor the development of the market for competitive value-added services and, if necessary, take appropriate actions to ensure consumer confidence and consumer protections in the event that existing mechanisms prove inadequate. In all circumstances where public utility commissions consider taking such action, there needs to be a clearly identified problem, and the solution should be commensurate with the problem and not impose undue burdens on third-party providers, nor be duplicative of existing protections. Otherwise, regulators risk stifling the market. As consumers continue to receive additional electricity-related services from third parties, there may be the temptation to increase oversight, but it will be important for regulators to allow the competitive market to work.

We also note that, much like utility relationships with customers, value-added services offered by third parties are likely to entail an ongoing relationship between the customer and the third party, and so they will be highly motivated to treat customers fairly. Solar leasing companies routinely enter into 20-year contracts with customers, whereas demand response companies rely on customer participation during demand response events. The success of these business models rests firmly on the ability of these providers to maintain good, long-term relationships with their customers.

Conclusion

As the electricity industry continues to evolve with new technologies and services that bring increased value to customers, a key consideration will be to ensure that both utilities and third parties are able to participate and benefit from these changes. Defining appropriate roles and incentives for all market participants will help ensure that utilities and third parties work

⁶³ For example, see Massachusetts Clean Energy Center, MASSCEC Contractor Code of Conduct (August 15, 2016). <http://files.masscec.com/get-clean-energy/ContractorCodeOfConduct.pdf>.



symbiotically toward delivering value to customers and achieving diverse state policy goals. This requires a clear delineation between basic and value-added services, as well as clear rules of the road that govern what value-added services can be provided by regulated utilities, and under what circumstances. It also suggests that regulators need to be proactive in establishing a framework for considering value-added services, so that they can remove obstacles to the further development of the market for them. Such a framework should not only address currently known services, but should be flexible enough to be able to respond to new products and services as they develop.

As companies of all types continue to explore what the changing electricity system means for them and how their businesses will evolve, we are most concerned that regulated utilities and competitive suppliers are not competing head to head to provide value-added services, but instead are working more collaboratively to meet the needs of customers. As such, generally speaking, value-added services that are competitive should be left to the competitive marketplace. With that said, as we have outlined in this chapter, we do see an important role for utilities in providing value-added services under certain circumstances, even as they become increasingly focused on facilitation of the market via a new and expanding role in creating the platform upon which a vibrant market for value-added services can flourish. This will include not only opportunities for utilities to provide value-added services directly to customers and third parties, but also opportunities for third parties to take advantage of new capabilities the grid will have to offer. This will take different forms in each state, particularly driven by the overall market structure in that state, namely whether the state is vertically integrated or restructured.



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3. A Consumer Advocate’s Perspective on Value-Added Electricity Services

By the National Association of State Utility Consumer Advocates⁶⁴

Introduction

The membership of the National Association of State Utility Consumer Advocates (NASUCA) is comprised of more than 40 utility consumer advocate offices in both restructured and vertically integrated states in the United States. This chapter of the report represents a general consumer advocate perspective and does not necessarily reflect the views of any particular state office or NASUCA as a whole.⁶⁵ Before responding individually to each of the four questions this report addresses regarding value-added electric services and products, consumer advocates highlight a few issues that apply generally. Importantly, consumer advocates want to ensure the continuation of safe, affordable and reliable electricity; that consumers are protected, empowered and well-informed;⁶⁶ and that appropriate valuation, transparency and disclosures exist.

Basic Services

Basic electricity services vary dramatically in their nature and state by state. Before defining basic versus value-added services, it is important to discuss what is meant by electricity services in general. Electricity services have been defined as “those activities that are performed within a power system and that create economic value for some agents by enabling the consumption of electrical energy, lowering the cost of consuming electrical energy, or both.”⁶⁷ Electric services may be physical, financial or information-based and vary in format, duration, commitment level, cost allocation method and economic implication.⁶⁸ Depending on the state, whether regulated or restructured, basic service may include helping to “keep the lights on” for the consumer

⁶⁴ NASUCA’s comments were developed by a subcommittee of interested NASUCA members and were approved by the NASUCA Executive Committee. Robert Mork, as chair of the NASUCA Electric Committee, led the subcommittee’s work. Sheri Givens, a former state utility consumer advocate and member of the NASUCA Executive Committee and current President of Givens Consulting LLC based in Austin, Texas, provided technical assistance.

⁶⁵ NASUCA is a nonprofit, voluntary organization of consumer advocate offices in more than 40 states and the District of Columbia. NASUCA members are designated by the laws of their respective jurisdictions to represent the interests of utility consumers before state and federal regulators and in the courts. Members operate independently from state utility commissions as advocates primarily for residential consumers. Some members may additionally represent small business consumers, and others may represent all utility consumers in their respective state. Some NASUCA member offices are separately established advocate organizations while others are divisions of larger state agencies (e.g., the State Attorney General’s office). NASUCA’s associate and affiliate members also serve utility consumers but are not created by state law or do not have statewide authority. Each individual NASUCA member reserves the right to take positions or advance views that are consistent or inconsistent with this document.

⁶⁶ Empowerment, as used here, includes ensuring consumer safeguards are in place and consumers have access to educational resources regarding their utilities, third-party providers, and various products and services. It does not imply all responsibility for education lies with the consumer.

⁶⁷ Massachusetts Institute of Technology Energy Initiative (2016).

⁶⁸ *Ibid.* at 20.



through metering, billing, service connection, and other such traditional utility services, or basic service may require, through legislative or regulatory mandate, that the utility offer the consumer energy efficiency options or other such services.

Another option for defining basic service might be through utilizing an analytical framework similar to the one introduced in the first report in this Future Electric Utility Regulation series, the potential profitability and social benefits of coordination framework.⁶⁹ Regardless of the state's definition, the electric utility should provide basic services to all consumers.⁷⁰

Value-Added Services

The term “value-added services” is a normative construct,⁷¹ such that describing something as a “value-added service” may predispose a reader to view it as something favorable and desirable in all circumstances. After all, who would not be in favor of “adding value?” Although we also use the term below and acknowledge that it has some usefulness, consumer advocates will add caveats such as value for whom and at what cost?

What is the relation of value-added services to grid modernization? Value-added services may be consumer-driven and of primary benefit to certain consumers who request or purchase them, or may be of primary value to the distribution system or the overall grid, thus benefiting the broader consumer classes and societal base. Value-added services may offer secondary economic, environmental and societal value, as identified in state or federal policy goals. Regulators should attribute and charge the costs of value-added services to those who want and use them. It would be improper to burden those on the grid system with costs for services they do not want or participate in, unless there are associated system benefits or externalities. For example, the senior citizen, low-income or other individual who lives in an efficiency apartment on a fixed income may not desire or be able to afford additional energy services above and beyond basic. He or she may simply want and need plain old electric service. Thus, the utility should provide basic service, or a base level of grid services, that all consumers use and need.

Using the term “value-added services” suggests that the services already being provided by a given utility should be deemed basic elements of electricity service or be given a contrasting name. One complication in doing that is that many NASUCA advocate offices operate in territories that have not restructured, such that generation services are still provided through

⁶⁹ Corneli, Steve, and Steve Kihm (2015).

⁷⁰ Utilities should also maintain their responsibility for ensuring a safe and reliable distribution system and, with the guidance of Independent System Operators/Regional Transmission Organizations (ISOs/RTOS), a safe and reliable transmission system.

⁷¹ That is, how things should or ought to be, how to value them, which things are good or bad, and which actions are right or wrong.



the utility, while numerous other advocates operate in territories that have restructured, such that consumers can select a third-party provider of generation services. Even outside of the generation context, there are some differences among territories regarding the suite of services already being provided by utilities. However, some of these distinctions can be glossed over for present purposes. The

key question is whether any service is an extension of the utility's natural monopoly functions or whether it is independent of those functions and therefore better suited for provision through a competitive market. We will refer herein to services like metering, billing, service connection and other traditional utility services (other than generation services) as "basic services," in contrast to value-added services.

As consumer advocates, NASUCA's members have a responsibility to be a voice of caution on promised benefits of value-added services to ensure that consumers actually reap their claimed rewards. Responses by NASUCA members to the questions posed in this report may vary depending on the nature of the value-added service and the beneficiaries of the service. In addition, the range of perspectives and experiences of members across states in some ways limits the specificity with which responses can be conveyed by the larger group.

Following are NASUCA's responses to the four questions this report addresses.

1. What new value-added services does grid modernization enable, and what are the appropriate roles for utilities and third-party service providers? Should utilities directly compete with competitive providers of new value-added services or provide new platforms and procurement mechanisms to enable third-party services?

NASUCA recognizes value-added services can encompass a large variety of existing and emerging products and services. Nationwide, many consumer advocate offices have participated, or are currently participating, in rulemakings, workshops, and docketed proceedings touching on the panoply of value-added services.⁷² Although some consumer advocates have yet to see these types of offerings in their respective states, there is a sense that such services are beginning to take hold in numerous jurisdictions and will be approaching their states shortly.⁷³ Thus, understanding, knowledge and preparation is necessary for all NASUCA

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⁷² For examples of value-added service proceedings, see footnotes 13 to 19.

⁷³ North Carolina Clean Energy Technology Center (May 2017). See *50 States of Grid Mod* at 12. According to this recent report, during the first quarter of 2017, 16 states and D.C. took action to study or investigate issues related to grid modernization, energy storage, demand response and rate reform (p. 13).



members. It is also essential to acknowledge that there are a number of new and innovative products and services that are still emerging and developing. Given the rapidly changing environment we find ourselves in today, it is even more critical that regulators have tools with which to assess these new developments to ensure that any new services are utilized to maximize the public benefit, that they are provided by the appropriate entity, and that costs are recovered in an equitable manner.

Given the rapidly changing environment we find ourselves in today, it is even more critical that regulators have tools with which to assess these new developments to ensure that any new services are utilized to maximize the public benefit, that they are provided by the appropriate entity, and that costs are recovered in an equitable manner.

There is a wide array of currently known and available value-added products and services. These include, but are not limited to, the following: microgrids;⁷⁴ electric vehicles (EVs) (e.g., EV charging stations, EV as storage or DER, or EV fleet management);⁷⁵ thermostat and rate programs;⁷⁶ demand-side management (DSM); demand response (DR);⁷⁷ voltage regulation, reduction, or volt/VAR optimization;⁷⁸ renewable energy sources (e.g., solar photovoltaic, wind,

⁷⁴ See Maryland Public Service Commission Case No. 9416, In the Matter of BGE's Request for Approval of its Public Purpose Microgrid Proposal for Consideration and Approval (Dec. 18, 2015). See also Comments of the Maryland Office of People's Counsel (OPC) (Feb. 26, 2016) in Case No. 9416. Specifically, OPC's comments provide that Massachusetts, New York, New Jersey and Connecticut have all begun to implement microgrid pilot or demonstration projects with a specific focus on serving critical infrastructure, emergency, and community facilities during sustained outage events, financed in whole or in part through federal grants (e.g., ARRA or DOE) or state or local sources (e.g., bonds or general funds) (p. 7). See <http://www.psc.state.md.us/search-results/?keyword=9416&x.x=13&x.y=19&search=all&search=case>. A wealth of information about Connecticut's microgrid grant programs, its shared clean energy (community solar) pilot, energy strategies, renewable energy procurements and similar resources may be found at the following link to matters before the Connecticut Department of Energy and Environmental Protection:

[http://www.dpuc.state.ct.us/DEEPEnergy.nsf/\\$EnergyView?OpenForm&Start=1&Seq=2](http://www.dpuc.state.ct.us/DEEPEnergy.nsf/$EnergyView?OpenForm&Start=1&Seq=2).

⁷⁵ See Missouri Public Service Commission, Docket ET-2016-0246, Application of Union Electric Company d/b/a Ameren Missouri for Approval of a Tariff Setting a Rate for Electric Vehicle Charging Stations, https://www.efis.psc.mo.gov/mpsc/commoncomponents/view_itemno_details.asp?caseno=ET-2016-0246&attach_id=2017002672. See also Oregon Public Utility Commission UM 1811, In the Matter of Portland General Electric Company, Application for Electrification Programs, <http://apps.puc.state.or.us/edockets/docket.asp?DocketID=20573>.

⁷⁶ In March 2017, a Texas utility, El Paso Electric, proposed a plan for a three-year residential and small commercial DR pilot utilizing smart thermostats to control summertime air conditioning. See Public Utility Commission of Texas Docket No. 46967 at http://interchange.puc.state.tx.us/WebApp/Interchange/application/dbapps/filings/pgControl.asp?TXT_CNTRL_NO=46967.

⁷⁷ In December 2016, Michigan enacted legislation (SB 437 and 438) directing the state utility commission to assess the use of DR in the state. Regulatory proceedings are expected to begin on DR implementation in summer 2017.

⁷⁸ U.S. Department of Energy (DOE) (2015). The DOE report cites Smart Grid Demonstration projects involving voltage optimization conducted by American Electric Power Ohio, Battelle Memorial Institute, Kansas City Power and Light, and the National Rural Electric Cooperative Association.



biomass, or other); ancillary services (AS); energy storage;⁷⁹ energy efficiency; combined heat and power (CHP); emergency, standby or backup generation; fuel cells; or other non-wires alternatives.⁸⁰ As stated in the introduction to this section of the report, the goals or values of some of these services may be to benefit the end-use consumers, or to help the utility system and the distribution grid, thus benefiting consumers as a whole.⁸¹

Consumer advocates must ensure the addition of such services ultimately provides benefits to consumers while enhancing reliability, security and affordability of electric services.⁸² Given the potential impact value-added services may have on all consumers sharing the network, regulators should create carefully designed processes to evaluate and positively influence the evolution of value-added services. Regulators will also need to keep in mind jurisdictional limitations in their evaluation. For example, some states may have no jurisdiction over certain wholesale market operations or markets.

A. Roles for Utilities

Regulators must be able to work within an established framework to identify which services are value-added and whether the

Basic electricity is not a value-added service.

utility or third-party providers should offer the services. Answers to these questions will provide guidance as to how costs should be recovered and should result in the socialization of costs that will have a public benefit and a prohibition on socialization of costs for those value-added services that do not provide a public benefit.

Basic electricity is not a value-added service and ultimately, regardless of which entity provides value-added services as discussed further below, it is important that the product or service actually provides the benefit or solution that is being promised. If the services are not providing benefits, then there are associated risks that consumers may be paying for something they were promised but are not getting. Providers must be held accountable, by the appropriate regulatory body or other entities, to the benefits they claim their products and services will

⁷⁹ The Maryland Governor signed a law passed by the State Senate and House in May 2017, allowing a state tax credit for energy storage systems that would be equal to 25 percent of installed costs, up to \$5,000 for residential systems and \$500,000 for commercial systems. See North Carolina Clean Energy Technology Center (May 2017).

⁸⁰ In April 2016, the Maine Public Utilities Commission (MPUC) opened an investigation into the designation of a NTA coordinator as authorized by the state legislation, the Smart Grid Policy Act. See MPUC Docket No. 2016-00049 at <https://mpuc-cms.maine.gov/CQM.Public.WebUI/Common/CaseMaster.aspx?CaseNumber=2016-00049&FRM=0>.

⁸¹ NASUCA members note that state and regional perspectives differ on the available or potential types of value-added offerings. Value-added products and services are evolving on a state by state basis, and the ability for either utilities or third-party service providers to compete in providing certain types of offerings may not be allowed due to physics, regulations or any variety of other factors. Thus, it is important to note that not all NASUCA member states allow for competition for these sample types of value-added products or services.

⁸² Hledik, Ryan, and Jim Lazar (2016). Examples of the types of benefits value-added services may offer include consumer economic benefits from lower electric bills or incentive payments for services provided; utility economic benefits from increased operational efficiencies or increased revenues; better overall utility and consumer energy management; enhanced grid reliability and resiliency; critical support during, or mitigation of, power outages; power quality improvement; load reduction facilitation; improved air quality or other environmental benefits; and others.



actually bring. Advocates do not want deployment of services that are merely in search of a problem, nor do they want to be forced to find a use for new product and service offerings. To accomplish public policy goals, the utility may be required to offer some services beyond basic services.⁸³ For example, in some states, the utility is allowed or required to offer energy efficiency services and upgrades, through a surcharge recovered from its consumers, to low-income, residential and small commercial consumers.⁸⁴

1. Utilities as Competitors

Some states are currently examining whether the utility should be allowed to participate in new markets, such as providing value-added services.⁸⁵ NASUCA recognizes that some utilities are already offering value-added products and services and, in general, most NASUCA members believe utilities should participate in providing potential competitive offerings; however, there are strong concerns that if utilities are allowed to compete, then certain regulations need to be in place.⁸⁶ For example, if products and services are not competitive (monopolistic) and beneficial to consumers, then state utility regulators should directly regulate such offerings for consumer protection purposes.

Utilities may prefer to directly compete in the offering of value-added services through a nonregulated affiliate, and the regulator should ensure strong, transparent affiliate transaction rules are in place.⁸⁷ Another option a utility might consider is to provide

⁸³ In regards to required services, there are a number of states that use a third party to administer energy efficiency programs (e.g., Oregon, Hawaii, District of Columbia, Vermont and Wisconsin). See Sedano (2011).

⁸⁴ Some advocates view the energy efficiency mandates placed on utilities as having a tendency to provide large financial incentives and rewards for utility shareholders. Some utilities complain that efficiency mandates cut into earnings, compelling the need for extraordinary treatment such as decoupling to restore earnings. Also, in many states, the utility or third-party administrator may or must offer energy efficiency services to large consumers, even if the large consumers may opt out of or self-direct the energy efficiency charge. See American Council for an Energy-Efficiency Economy, Self-Direct and Opt-Out Programs at <http://database.aceee.org/state/self-direct>.

⁸⁵ By way of example, many states have opened proceedings to review grid modernization and value-added service concepts. As of March 2017, grid modernization proceedings nationwide include New Hampshire's Grid Modernization Working Group submitting its final report to the state utility commission; the Illinois Commerce Commission initiating its NextGrid proceeding; the Public Utilities Commission of Ohio launched its PowerForward proceeding; the Washington Utilities and Transportation Commission issuing a draft policy statement on the role of energy storage in its integrated resource planning process; and the New York Public Service Commission issuing its Value of Distributed Energy Resources proceeding. See North Carolina Clean Energy Technology Center (May 2017) at 12.

⁸⁶ It is important to note that not all NASUCA offices agree with the premise that utilities should be allowed to compete with third parties in providing products and services. Some NASUCA members proffer that utilities are in the best position to provide basic services to their consumers, including those that continue to have conditions associated with a natural monopoly, while third-party providers may be in a better position to provide value-added services.

⁸⁷ See Missouri Public Service Commission (November 26, 2016). The Missouri Office of Public Counsel's (OPC) position regarding electric vehicle charging stations in ET-2016-0246 was that the Missouri Public Service Commission should reject the utility's request to rate base EV charging stations for the following reasons: (1) Both consumers and drivers are best served by a competitive market for charging services rather than a regulated monopoly. There is no reason why Missouri cannot have a competitive market in EV charging and Ameren Missouri (and other investor-owned utilities) *nonregulated* services should be allowed to participate in that market; (2) Ameren Missouri's *regulated* services can best enable the promotion of EV adoption by offering well-formed, time-of-use rates on an



products and services through a separate shareholder-funded company. All competitors, including both utilities and third-party providers, should be subject to a level playing field in the competitive arena.

i. Pros to Utilities Competing

Potentially Lower Cost Offerings. Utilities may be able to provide lower cost products and services than third-party providers since all services must go through the utility at some point and the utility typically subsidizes value-added services. For example, it is less expensive to allocate a small portion of facilities' costs and administration as compared with creating an infrastructure outright, as third-party providers must do. A third-party provider is, in some sense, an additional layer, and is using the utility's capabilities, similar to non-facilities based providers in telecommunications. Ultimately, sufficient detail must be given by a utility to review the reasonableness of any proposed product or service offering, especially in light of any consumer cost recovery request.⁸⁸

Regulation and Incentives. A regulatory utility commission should provide oversight of new product and service offerings and, if a utility provides them, the utility would bear the risks, penalties and disallowances if the offering did not prove beneficial or perform as promised.⁸⁹ Furthermore, it may be easier for a regulatory commission

opt-in basis that encourage charging during low-cost, off-peak hours. The deployment of EV charging infrastructure should be left to its nonregulated services (if Ameren Missouri elects to participate) and to free market competition; (3) Both Ameren Missouri and free-market EV charging stations *can* and *should* provide a symbiotic force for consumers and consumers alike moving forward, assuming vehicle choice and technological advances favor this path. If Ameren Missouri is to be believed, that serious penetration of EVs is just around the horizon as range anxiety is eased by longer battery life and reduced automobile costs, then demand should increase and the market will respond accordingly with both EV cars and EV charging stations as appropriate. Under this favorable scenario, the risks of stranded assets are eliminated and consumers, Ameren Missouri, and the economy as a whole benefit from fair, efficient competition. In Missouri, the Commission ruled that it lacked statutory authority over the proposed EV charging stations. As a result, the investor-owned utilities will not be able to recover costs "above the line" and nonparticipating consumers will not be subsidizing a nonessential service.

⁸⁸ See Maryland Public Service Commission (MPSC) Case No. 9416, Comments of OPC (Feb. 26, 2016); see <http://www.psc.state.md.us/search-results/?keyword=9416&x.x=13&x.y=19&search=all&search=case>. In December 2015, Baltimore Gas and Electric Company (BGE) filed a proposal to construct two public purpose microgrids in its electric distribution service territory, the Maryland Public Service Commission (MPSC) noted the case could serve as conditions precedent to approval of microgrid projects, and BGE sought MPSC approval to recover microgrid costs from consumers through a new rider (Rider 12) to its Electric Service Tariff. The state utility consumer advocate, Office of People's Counsel (OPC), commented on the BGE's microgrid proposal and recommended rejection. The MPSC rejected the proposal.

⁸⁹ If utilities are allowed to compete with third-party providers in creating product and services offerings, some examples of regulatory accounting protections offered by consumer advocates for regulator consideration include: Code of Maryland Regulations (COMAR), Electric and Gas Companies – Affiliate Regulations, COMAR 20.40.01 and .02 (pp. 71–78), <http://webapp.psc.state.md.us/Intranet/comarfile/Title20.pdf>; North Carolina Code, Section 62-153, Contracts of Public Utilities with Certain Companies and for Services, https://law.justia.com/codes/north-carolina/2009/Chapter_62/GS_62-153.html; Connecticut Department of Public Utility Control, Review of the Service of Policies and Contracts of the Local Distribution Companies (Dec. 2004), <http://www.dpuc.state.ct.us/FINALDEC.NSF/Od1e102026cb64d98525644800691cfe/0aadcb7948e786fd85256eae005e2990?OpenDocument&Highlight=0,03-08-11>; and Kansas Corporation Commission Order, Ring Fencing Reporting



There are already many “sticks and carrots” for the utility to perform as required; however, there may not be similar (or any) regulations or incentives for third-party providers.

to require a utility to terminate, or revise the compensation for, a poorly operating pilot or an innovation that has proven obsolete or of limited value than it would be to terminate a service or revise a compensation scheme being utilized by third-party

providers who have established an industry in the territory. There are already many “sticks and carrots” for the utility to perform as required; however, there may not be similar (or any) regulations or incentives for third-party providers. Conversely, if a product or service is deemed to be competitive, then it may be the case that incentives for the utility are not appropriate. The same may be true for some types of regulations on utilities, and marketing flexibility or other allowances may be warranted in order to help keep consumers connected to the grid and contributing to fixed costs. Inevitably, cost allocation and rate design become key issues under either scenario of the utility as a competitor or a platform provider, as further discussed below.

Service Quality and Reliability. One aspect that should not be forgotten is service quality and reliability. Adequate service quality from electric utilities is essential to everyday life and impacts almost every function in our society, and service inadequacies and interruptions frustrate or disrupt normal functions.⁹⁰ NASUCA has long held that state regulatory authorities should:

- establish regular service quality reporting requirements for electric utilities,
- establish minimum performance standards with appropriate enforcement provisions to monitor and promote improvement toward a consistently high level of service quality,
- ensure service quality data and information is made available to the public to encourage companies to achieve good performance results, and
- assure regulation is open and effective to assist consumers who must choose among competitive providers.⁹¹

Utilities, with established and mandated service quality metrics, may be in a better position than third parties to ensure offerings adhere to prescribed and enforceable standards and maintain or improve service quality.

(Dec. 2010), <http://estar.kcc.ks.gov/estar/ViewFile.aspx/20101203114840.pdf?Id=19f2d924-2089-4295-b419-9968e71e7298>.

⁹⁰ NASUCA Resolution 2005-04, Minimum Service Quality Standards (June 14, 2005), <https://nasuca.org/minimum-service-quality-standards-resolution-2005-04/>.

⁹¹ *Ibid.*



Additionally, a state such as Hawaii or Texas that is not interconnected with another state may have reliability concerns related to the entire grid as well as to individual consumers. If unregulated third-party providers offer products and services that the utility has no visibility to, or has not had the opportunity to perform market research on, then such offerings could potentially impact grid reliability.⁹² In regards to DER offerings, the North American Electric Reliability Corporation (NERC) has further identified potential bulk system reliability impacts and risks due to high levels of DER penetration: lack of visibility and controllability of DER; nondispatchable ramping or variability of certain DER; coordination of system restoration; impacts on forecast of apparent load seen by the transmission system; and others.⁹³

Similarly, in areas where there is no independent system operator or regional transmission operator (ISO/RTO), there may be concerns related to the utility not being able to monitor or properly utilize value-added products or services in a cost-effective or efficient manner to benefit the transmission system and its consumers. For example, if the ISO/RTO does not know the level of solar PV or demand response resources at the distribution level, then it may overestimate the transmission investments needed or may wrongly forecast where and what type of investments are most cost-effective across a utility's service territory or the regional transmission system. This, in turn, could dramatically increase and impact those costs passed on to consumers.

ii. Cons to Utilities Competing

Increased Consumer Costs. Utilities that engage in traditional cost-of-service rate recovery may lack the incentive to guard against risk or properly assess the potential unintended consequences from the implementation of value-added services. Utilities typically evaluate investment decisions in light of their ability to recover such investment, along with a rate of return thereon, through customer rates. Thus, risk assessments and cost-benefit analyses may not be incentivized if the utility otherwise believes it will recover its investment through rates. Without appropriate incentives and safeguards, regulatory approval of value-added services can expose captive consumers to unanticipated or premature write-downs, devaluations or conversion to liabilities.

⁹² “[DERs] all have different characteristics which in large numbers may aggregately affect the bulk system. Most, if not all, are not presently visible or controllable by the bulk system operators, and many are connected according to IEEE 1547 standard, which requires disconnection from the system for abnormal conditions raising issues with fault ride through with high penetrations of DER. High levels of distributed variable generation connected to the system may cause particular problems due to the uncontrollable nature of its output. PV with inverters designed without grid-support functions, if present in large amounts, can affect the frequency response and voltage profile of the system.” See North American Electric Reliability Corporation (August 2011) (Executive Summary at 1).

⁹³ *Ibid.* at 2.



A project that is cost-effective, from one vantage point, should also account for future cost and market considerations. Failure to account for this may result in consumers funding an asset that no longer operates the way it was designed to or is poorly supported by the utility because it is operating and maintaining version 2.0 while other service territories are working on version 4.0. The needs and expectations of consumers are far from unanimous and as such should not be forgotten when considering sweeping reform.⁹⁴

NASUCA supports policymakers in protecting the interests of consumers in creating market structures for competitive utility services.

Affiliate Transaction

Concerns. NASUCA supports policymakers in protecting the interests of consumers in

creating market structures for competitive utility services.⁹⁵ Utility codes of conduct exist for electric utilities and govern how companies should interact with their competitive affiliates to maintain fair and open competitive markets and ensure regulated utilities do not favor their own competitive affiliates over other market participants; however, in many utility filings, affiliate transactions are often a point of contention for advocates and other intervenors. If a utility has a nonregulated subsidiary offering a new competitive product or service into a market, then there needs to be continued assurances that the monopoly utility does not unduly subsidize the nonregulated company and offers it no unfair advantage, such as using the utility's name in its offerings, bill inserts or other consumer communications. If a utility company properly creates a separate, shareholder-funded operation, in accordance with its code of conduct regulations, then it might be acceptable for that operation to compete and offer new products and services. Deviations from the codes of conduct will need to be continuously monitored and enforced to avoid any potential market power abuses, imprudent expenses, and cross-subsidization between regulated and unregulated activities if utilities are allowed to compete in this arena. It is important for regulators to regularly review affiliate relations and perform management audits.

⁹⁴ *The Economist* (June 11, 2016). By way of example, the article articulates the uncertain future of smart-home technology, and it cites a PricewaterhouseCoopers survey in Britain indicating "that 72% of people have no plans to adopt smart-home technology in the next two to five years and that they are unwilling to pay for it." Also, it cites Forrester research firm's finding that only 6 percent of American households have a smart-home device, including internet-connected appliances, home-monitoring systems, speakers or lighting, and growth is not expected with the number expected to only reach just over 15 percent by 2021. Businesses are incited to embrace IoT, but home devices are "fun but not essential."

⁹⁵ NASUCA Resolution 1998-12, Urging Federal and State Policymakers to Protect the Interests of Consumers in Setting Policies to Create the Market Structure for Competitive Utility Services (Nov. 11, 1998), <https://nasuca.org/urging-federal-and-state-policymakers-to-protect-the-interests-of-consumers-in-setting-policies-to-create-the-market-structure-for-competitive-utility-services-1998-12/>.



Incentives and Prohibitions. Incentives are frequently offered to utilities to provide basic services, and those incentives are not always aligned with consumer interests. Misaligned incentives might include a service offering that is extremely valuable to consumers, like demand response (DR). If a vertically integrated utility is able to monopolize itself inside a consumer's premise by providing DR, then it is questionable whether the utility would utilize its DR offering during peak times which could potentially devalue its own generation resources. In vertically integrated states or restructured states where the utility has an affiliate in the generation business, the utility or its service company has a complex, but direct, incentive to favor outcomes on the distribution system which benefit its generation business. Also, it may not even be possible for utilities or their affiliates to compete in certain states, due to prohibitive statutes or regulations, highlighting the importance of reviewing the utility business model and associated utility regulations in each jurisdiction. In restructured states, some advocates argue that the utility should not compete, as it should not be allowed to grow its rate base by entering into new businesses and providing new services.

Expanding the services that a utility relies upon for its revenue stream may allow for skewed economic incentives for the utility and may not be in the best interest of public policy goals. Such goals include placing risks of new technologies on market participants rather than consumers, using competition to drive down cost and create innovation, and avoiding subsidies running from nonparticipants to participants. For example, utilities may oppose energy efficiency and demand response because it lowers their energy sales. This is not said to endorse third parties in the provisioning of products and services; rather, it is said to acknowledge the potential paradigm shift from the utility providing only basic service to the utility providing a platform for value-added services. Advocates can assist regulators by identifying concerns and helping to develop analytical tools and frameworks that help guide regulators on a path that emphasizes the public good over a profit motive; however, often this does not work as the monopoly utility tends to subsidize value-added services either directly or indirectly and in effect, real competition for services becomes nonexistent.

Unfair Competitive Advantages. The utility likely holds a competitive advantage over third-party service providers in that it has a greater understanding of its consumers' usage through its system data and it controls access to its grid system platform. In some instances, the utilities may not share the data needed by a third-party provider to offer appropriate services. It may be important for third parties to have access to consumer data, with privacy protections in place, as such access is enabling in the introduction of new services and products (e.g., automated demand response, and smart appliances) outside the utility's core competency and thought



previously infeasible.⁹⁶ Consumer data has always been helpful to third-party energy suppliers in competitive markets where historical data allow for more competitive, potentially lower cost, targeted offers.⁹⁷ Consumers should be afforded the opportunity to control or choose which entity (if any) they share their data with, and some states recognize this through personal privacy regulations.⁹⁸ In some states, consumer advocates have had experience with utilities making it challenging for third-party providers to interconnect to the grid to provide distributed generation (DG) or microgrid systems. Some advocates have concerns that if utilities are allowed to compete by providing DG or other products and services already being provided by third parties, then the utilities may make it even more difficult for others to connect to its infrastructure.⁹⁹

II. Utilities as Platform Providers

Consumer advocates envision possibilities for utilities to act as a system planner that maintains and builds infrastructure to enable a “platform” for certain value-added services offered by third-party providers. Among most NASUCA members there is an expectation that a utility taking on this responsibility should be creating a neutral platform, regardless of its definition, to allow third-party providers access and use;

⁹⁶ For additional discussion of NASUCA’s concerns on data and data privacy, see question 2, subsection (b). See also NARUC (2015). Examples of the benefits data can provide include providing utilities with a “far more complete picture of the workings of their system ... [that] enables them to provide services that redefine the utility-consumer relationship” (p. 14).

⁹⁷ Some types of data include interval kilowatt-hour (kWh) usage, interval kilowatt (kW) demand, household size and number of occupants, building characteristics, load characteristics, DG/DER performance, consumer preference for communications, and consumer preference for DSM or other program participation.

⁹⁸ For example, Texas law provides that consumers own their energy consumption data, utilities are obligated to protect that data from misuse or unauthorized public disclosure, and retail electric providers/third parties may be allowed access to such data if authorized by the customer. See Texas Utilities Code, Section 39.107 (b) providing, “... All meter data, including all data generated, provided or otherwise made available by advanced meters and meter information networks, shall belong to a customer, including data used to calculate charges for service, historical load data, and any other proprietary customer information. A customer may authorize its data to be provided to one or more retail electric providers under rules and charges established by the [Public Utility Commission of Texas].” See also Section 39.107(k) providing, “The commission shall allow an electric utility or transmission and distribution utility to share information with an affiliated corporation, or other third-party entity, if the information is to be used only for the purpose of providing electric utility service to the customer or other customer-approved services.”

⁹⁹ In Iowa, a utility tried to claim the city entering into a financing arrangement with the solar seller made the solar seller a utility. The utility then argued the solar seller utility could not compete in its territory. Specifically, the Iowa Utilities Board (the IUB) considered whether SZ Enterprises, LLC, d/b/a Eagle Point Solar (Eagle Point) could enter into a long-term financing agreement related to the construction of a solar energy system on the property of the city of Dubuque under which the city would purchase from Eagle Point, on a per kilowatt-hour basis, all of the electricity generated by the system. Prior to proceeding with the project, Eagle Point sought a declaratory ruling from the IUB that under the proposed agreement (1) Eagle Point would not be a “public utility” under Iowa Code section 476.1 (2011), and (2) Eagle Point would not be an “electric utility” under Iowa Code section 476.22. If Eagle Point was a public utility or an electric utility under these Code provisions, it would be prohibited from serving customers, such as the city, who were located within the exclusive service territory of another electric utility, Interstate Power and Light Company (Interstate Power). See Iowa Code § 476.25(3). The IUB agreed with IPL. The district court and Iowa Supreme Court reversed agreeing with solar seller. *SZ Enters. v. Iowa Utils. Bd.*, 850 N.W.2d 441 (Iowa 2014). Also, in Minnesota, the Attorney General’s Office has filed comments voicing this concern. One specific example can be found in Docket 13-867 (March 4, 2015), at 5–6.



however, as previously discussed, some advocates may support allowing the utility to participate in the provision of value-added products and services with the appropriate controls in place to address certain concerns. NASUCA addresses here the possibility of utilizing a platform business model and comments on the creation of more general platforms for connecting buyers and sellers of energy services.¹⁰⁰

Utilities often have goals to offer products and services to provide better service for their customers, to earn more revenue in some instances, to make more capital investments, and at times to compete with third parties. The modern grid, in particular advanced metering and related information technologies, can enable third-party technologies. Potential roles for the utility may include offering these third-party providers the following:

- a business model platform for third parties or marketplace platform (discussed further below);
- enabling technology;
- interconnection enablement;
- data management services; and
- ensuring consumers can readily understand product and service offerings and that they will have ready access to and assistance in evaluating them.

NASUCA submits that it is important that a utility be required to treat each participating entity utilizing its infrastructure network fairly in its provision of new products and services; yet, it should be recognized that the electric grid system exists to benefit consumers, not solely for third-party providers to offer their products and services or utilities to earn more revenue, make more capital investments, retain customers and generally compete with third parties.

One example of the utility as a business platform is found in restructured states where the utility delivers electricity, maintains the transmission and distribution (T&D) system, reads meters and responds to service interruptions, while the retail electric supplier purchases electricity from generation resources to sell to end-use customers. Where the retail electric supplier provides direct billing, it will typically charge its consumers a T&D fee along with any other regulatory-approved charges (e.g., advanced meter infrastructure, energy efficiency, or other).¹⁰¹

¹⁰⁰ The platform business model is similar to the discussion in Corneli and Kihm (2015), at 43–46, using the construct of utility as an integrator or energy services utility. The utility as a “The Smart Integrator” concept is further discussed in Peter Fox-Penner’s book, *Smart Power* (2d. ed. 2014).

¹⁰¹ The U.S. has 14 fully restructured or deregulated jurisdictions, including Connecticut, District of Columbia, Delaware, Illinois, Maine, Massachusetts, Maryland, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island and Texas. In Texas, the retail electricity market was restructured separating generation, transmission and distribution, and billing for the end-use customer (through a retail electric provider, or REP). REPs are authorized to charge for certain transmission and distribution utility’s charges (e.g., advanced metering, competition transition,



Another example of a business model platform might be the New York Reforming the Energy Vision (REV) initiative debating the services that the utility should provide when crafting its vision of the utility of the future.¹⁰² Ultimately, the REV initiative may determine that the utility should provide services that some have argued are too expansive. Specifically, some stakeholders hold that distribution utilities will provide grid operation services, while others argue for an independent distribution system operator¹⁰³ to be created in order to further limit conflicts of interest.

Another platform model for the utility might be the utility acting as an online marketplace or digital platform for third parties to connect buyers and sellers of energy services and products. This new utility role could be more administrative in nature by integrating and supporting value-added services. Under this scenario, the utility could maintain contact with its consumers and allow them to select from a collection of services and products, without directly competing.¹⁰⁴ An analogy might be Yelp, which acts as a restaurant platform provider enabling the consumer to choose from a variety of eateries in a defined service territory and make an informed choice about a service (e.g., a certain cuisine, ambience, cost or location of a restaurant).

In the same way, the utility could make such a responsive list of third-party product and service offerings available, catered to a consumer's wants and needs at the time of their search or request. However, certain protections would be needed to ensure the utility is not acting in a biased and self-serving manner in providing lists of potential third-party

energy efficiency cost recovery factor and nuclear decommissioning), though the REP may choose not to line-item these charges on the consumer's bill and "bundle" all charges associated with the consumer's electric service into the kilowatt-hour rate. Some REP plans include energy generated partially or solely from renewable resources, and some plans offer value-added services or promotions (e.g., air conditioning maintenance, rewards programs or other customer service benefits). See Texas' Power to Choose at <http://www.powertochoose.org/en-us/Content/Resource/Shopping-Process>; see also Texas Public Utility Commission's Utili-Facts, Charges on Your Electric Bill at <http://www.puc.texas.gov/consumer/facts/factsheets/elecfacts/ChargesElectBill.pdf>.

¹⁰² New York's REV is one example, but there are numerous others (e.g., utilities procuring demand response services via RFPs in Oregon, utilities creating a network of solar PV installers for their utility solar PV programs in Arizona, and storage solicitations in California).

¹⁰³ For a discussion of utility versus independent distribution system operators, see De Martini and Kristov (October 2015).

¹⁰⁴ For example, New York's Consolidated Edison is building an efficiency marketplace for its commercial customers using a cloud-based software program where customers can obtain actionable insights on energy conservation and find market partners to retrofit those measures. On the residential side, the utility is proposing a consumer engagement platform allowing residential customers to receive targeted information about their energy use and choose offerings from third parties. Con Edison would receive a referral fee from service providers obtaining new customers. See Ecova, Con Edison: Leveraging Ecova's Retroefficiency Analytics Platform to Drive Energy Savings and Demand at <https://www.ecova.com/blog/2016/09/new-con-edison-video-leveraging-ecovas-retroefficiency-analytics-platform-drive-energy-savings-engagement/> and the Con Edison Marketplace at <https://marketplace.coned.com/>.



Potential roles for third-party service providers include those services outside the utility monopoly service, such as:

- *innovation;*
 - *automation;*
 - *ensuring consumers can understand and be protected on product and service offerings;*
 - *interaction with the utility on behalf of the consumer;*
 - *demand aggregation;*
 - *energy management services;*
 - *demand response;*
 - *frequency regulation; and*
 - *voltage regulation.*
-

transparency in retail choice markets, a utility administering the platform might be able to address certain market failures by reviewing products and services appropriate for and beneficial to its infrastructure and its consumers' efficiency, generation, storage or other needs. On the other hand, if a utility only serves as a platform, and nothing else, then this could raise a concern of leaving many potential benefits to the utility system on the table.

B. Roles for Third-Party Service Providers

Potential roles for third-party service providers include those services outside the utility monopoly service, such as:¹⁰⁵

- innovation;
- automation;
- ensuring consumers can understand and be protected on product and service offerings;
- interaction with the utility on behalf of the consumer;
- demand aggregation;
- energy management services;

¹⁰⁵ As previously mentioned, in footnotes 13 to 19, NASUCA members are participating in numerous grid modernization and value-added service dockets being proffered by utilities and third-party service providers in a variety of geographic regions (e.g., electric vehicles proceedings in Oregon and Missouri, microgrids proposals in Maryland, voltage optimization pilots in Ohio, DR programs in Texas and many others). These proceedings are ongoing in both vertically integrated and restructured regions.

companies. Thought will need to be given to ensure that the utility avoids the appearance that it is endorsing a given product or service offering by a third-party service provider, and disclosures will be necessary pertaining to any referral fees or commissions the utility receives from third parties. Potentially, third parties may need to meet certain standards (e.g., credit requirements, Better Business Bureau or similar ratings, performance standards, and business standards).

It is possible that a "public good" argument could be made that utilities are allowed to participate as a platform for the marketplace. For example, in states experiencing complaints related to price



- demand response;
- frequency regulation; and
- voltage regulation.

In some circumstances, third-party providers may be selected through a request for proposal process overseen by the public utility commission or the local utility, in order to ensure appropriate oversight, conditions of service and contractual responsibilities are met and maintained.

Nationwide, many consumer advocates working within their state have had varying experiences with third-party providers. For example, in deregulated states, third-party retail energy suppliers sell electricity to the end-use utility consumer. While there have been consumers who have achieved savings or have enjoyed choices, other consumers have faced variable rates changing significantly without notice, uncertainties as to how their rate is calculated or the index utilized, slamming,¹⁰⁶ exploitation of vulnerable populations, and high contract cancellation fees, resulting in numerous complaints with consumer advocate agencies, public utility commissions and State Attorneys General.¹⁰⁷

Some advocates believe value-added services should primarily be provided by third parties unless certain issues are deliberately considered, explored and addressed. Related concerns include the fact that state utility regulators often do not have jurisdiction over third-party providers, and state legislatures generally encourage service offerings by competitive providers that may be of interest to consumers.

2. What policy and regulatory changes may be needed in the face of increasing competition for electricity services from third-party providers?

NASUCA recognizes that there is a need for many policy and regulatory changes to facilitate the current and future variations in the market due to the emergence of third parties providing energy products and services. Again, many state consumer advocates have learned difficult lessons from their experience with third-party competitive energy suppliers. Policy makers, legislators, regulators, consumer advocates and interested stakeholders together will need to

¹⁰⁶ *Slamming* is the illegal practice of a person or company switching a consumer's electricity provider to another electricity provider without that consumer's permission.

¹⁰⁷ NASUCA Resolution 2014-01, Variable Rates Contract (approved June 3, 2014), <http://nasuca.org/variable-rates-contract-2014-01/>. As evidenced by this resolution, lessons learned and best practices may be drawn from these activities. Suggested consumer protection mechanisms for these third-party providers include limiting monthly and annual rate increases; requiring conspicuous disclosures in uniform, brief and easily comprehensible formats; providing transparency relating to methodologies or formulas utilized to calculate rates; offering websites and toll-free numbers for consumers to obtain information; limiting early termination or cancellation fees to a reasonable amount; prohibiting automatic renewals of fixed-term contracts; and establishing a reasonable rescission period.



address new policies, regulations, uncertainties and challenges relating to regulating value-added services and products.

Consumer advocates will likely raise key questions and potential concerns in proceedings to consider adoption of specific value-added services in their territories. These concerns would include, for example, guaranteeing consumer protection guidance around new offerings, ensuring uniform industry standards, avoiding prematurely locking captive ratepayers into certain technological paths, avoiding the stranding of costs and assets for technologies that are on the verge of obsolescence, ensuring effective and fair competition for service provision whenever applicable, and avoiding risks of consumer marketing abuses or privacy violations.

A. Consumer Protection

Given the novelty and inherent complexity of some nascent products and services, the potential for consumer confusion may be great.¹⁰⁸ Consumer protection regulations should be required to support the prohibition against unfair, false, misleading or deceptive advertising or marketing

Consumer protection regulations should be required to support the prohibition against unfair, false, misleading or deceptive advertising or marketing practices

practices, including the requirement for the third party to clearly identify the regulatory commission's certification or other appropriate approval number in any marketing material directed to potential subscribers.¹⁰⁹ The third party should also provide detailed information to prospective consumers in writing to enable them to make informed decisions about potential risks and benefits associated with the product or service. If a third-party provider is allowed to solicit prospective consumers by telephone, then the actual contract should not be able to be executed verbally by telephone; rather, a complex, contractual relationship should be coupled with informed consent, which cannot be adequately covered during a marketing call. Most of these issues are covered in traditional consumer protection law and the state fraud statutes; however, it may not be clear whether these requirements apply to utility-related matters in all state jurisdictions. These would be important customer assurances to consider.

¹⁰⁸ See Maryland Public Service Commission Rulemaking (RM) 56, Comments of the OPC and Proposed Revisions to the Commission Staff's Draft Proposed Regulations (May 31, 2016), <http://www.psc.state.md.us/search-results/?keyword=rm56&x.x=14&x.y=22&search=all&search=rulemaking>. In Maryland Public Service Commission's Docket RM 56, Community Solar Energy Generating Systems, the consumer advocate called for a distinct set of consumer protections for subscriber organizations to be adopted, as neither the utility nor retail supplier consumer protection regulations were applicable to them. It also submitted that the legislative mandate of the Commission would be meaningless unless the Commission was also afforded the authority to establish and enforce consumer protection regulations. In 2015, the Maryland General Assembly passed a law establishing a pilot program for community solar energy generating systems and required the Commission to adopt regulations, including consumer protection regulations, for the community solar pilot by May 2016.

¹⁰⁹ For example, in some states a third-party retail energy supplier is required to file an application with the state utility commission, certifying the supplier meets certain applicable financial, technical or other requirements, and obtain a certification or number from the commission indicating its acceptance of the application.



Consumer protections need to be carefully designed and must include transparent consumer disclaimer language informing consumers of the risks involved with adopting any new product or service offering. Such disclaimer language may alert potential buyers of products and services to possible future rule or rate changes which could have an impact on the economic assumptions behind their purchase.¹¹⁰ This disclaimer language might not regulate the financial contents of the third-party offer; however, it could require all residential consumers who are considering a certain value-added service be aware that the price and payback assumptions seen today are not static and might be subject to change if regulations change in the future.

Making sure utility consumers can readily understand products, services and their rights related to those offerings will be key to successful introduction of those offerings into a market. Consumers will need to be aware of which state and federal regulatory agencies have the necessary oversight, jurisdiction, and enforcement authority over third-party (and utility) providers of new product and services. They will need to know where to file complaints and how to seek recourse against any entity which fails to provide its offering as promised or to seek redress against any bad actors that enter the marketplace.

B. Data

Data privacy, data transparency, and consumer expectations will need to be addressed with increased information sharing. There also are questions that arise from security, privacy and ownership of advanced meter information data that need to be considered. While customer information should be owned by the customer, these considerations are complicated by the uncertainty at the distribution level over open, standard, direct-access communication interfaces. Third-party providers may be resistant to increased regulation, arguing such regulation has no place in a competitive market; however, if the third parties are seeking benefits, like access to consumer data a utility possesses, then the third parties will need to have certain regulations placed on them and accept appropriate oversight over them.

Data transparency at the distribution system level may be important to allowing for more market-based processes for non-wires alternatives or market-based compensation for products and services at the distribution level. Regulations will need to ensure that appropriate information is shared by utilities with third-party providers, and vice versa.

¹¹⁰ For example, the Missouri Office of Public Counsel advocated for language in relation to large-scale capital investments as it pertains to third-party rooftop solar investments. In the past five electric rate cases in Missouri, utilities have proposed fixed monthly customer charge increases or the addition of a “grid-access charge” of 50 percent, 178 percent, 21 percent, 52 percent, 11 percent and 61 percent. See Missouri PSC Docket Nos. ER-2014-0351, ER-2014-0370, ER-2016-0023, ER-2016-0156, ER-2016-0285, and ER-2016-0179.



NASUCA's view is that individual personal consumer information must be protected from unauthorized disclosure, and privacy of such information should be the default.

NASUCA's view is that individual personal consumer information must be protected from unauthorized disclosure, and privacy of such information should be the default.¹¹¹ Many consumers do not want their information shared with third parties. For example, in numerous states, consumers are bombarded by telephone calls from third-party energy providers, and there needs to be assurances, if information is shared with third

parties for new product and service offerings, that this problem is not exacerbated. For those third parties whom the consumer has authorized to have access to personal information, the third party must be required to treat the information in a manner that protects the information and privacy rights of the consumer while limiting the use of such information to the specific purposes authorized by the consumer.¹¹² This would also include prohibiting the authorized third-party provider from releasing the consumer's information to any other unauthorized party.

When dealing with sensitive consumer information, each state must review its rules and prohibitions relating to the privacy of consumer information. The privacy rules must be clearly written, and the authority to enforce those privacy rules must be specifically identified. The enforcement mechanisms available to that authority must also be clearly articulated. Statutes, regulations and the rules supporting those regulations must work in concert to effectively and directly deal with violations of any privacy rules. Rules with weak or unclear enforcement provisions do not protect consumers.

Another issue that might arise is data production in regulatory proceedings. There are concerns relating to third parties intervening in proceedings and accessing confidential or proprietary data. It may be necessary for third parties to sign confidentiality agreements, but it is unclear if signing such an agreement is enough to ensure the third party does not use such data for its own competitive benefit. For example, in contested telecommunications proceedings, confidential consumer data is not shared between competitive providers.

In addition, some data may be utilized to unlock services previously unknown to the consumer or utility. Additional data generation could lead to increased transparency in utility costs, especially at the distribution level, which has the potential to improve system planning and reduce costs, again benefitting both the utility and its consumers. Detailed electricity usage data supports a variety of new utility services, such as a web portal for consumer information, insight into service restoration, faster bill resolution, and feedback on energy usage. Such feedback

¹¹¹ NASUCA Energy Privacy Resolution 2011-8, Urging State and Federal Officials to Adopt Laws and Regulations Requiring Electric Utilities to Protect the Privacy Rights of Customers (Nov. 15, 2011), <https://nasuca.org/energy-privacy-resolution-2011-8/>.

¹¹² Ibid.



includes electricity usage interval data, appliance or equipment loads, and high-usage alerts. Studies have shown that, on average, consumers reduce their demand by a mean of 7 percent — and as much as 13 percent — when they receive feedback on their usage.¹¹³

Deregulation, or competition, does not mean zero regulation.

Deregulation, or competition, does not mean zero regulation. Institutional structures may need to be adapted to ensure appropriate regulation in the face of competition for value-added services. It is possible to loosen regulations in some distinct areas while still requiring third parties to share data so that the power system can benefit from increased coordination.

C. Uniform Industry Standards

Developing clear, uniform and comprehensive industry standards will be a necessary and beneficial complement to regulatory changes. Reliability, service quality and system security are paramount. This may be a no-regrets endeavor for states. Such uniform standards may be adopted by the International Electrotechnical Commission, National Institute of Standards Technology, North American Energy Standards Board or other relevant organizations.

Regulations may need to speak to the current technological state of products and services, recognizing today's technologies may be obsolete or replaced by more efficient, less expensive technologies tomorrow. With such rapid technological changes happening, there may be an inability on the part of regulators and policymakers to keep up with such change.

D. Compensation and Value

Reexamining how products and services are compensated should be a priority. The focus should be placed on market-based approaches, as opposed to administratively set compensation mechanisms. Fairness will be elusive without market-based approaches. Furthermore, market-based processes do not need to be overly complex or aimed at consumer segments that will not likely respond in an expected manner. Non-wires alternatives that are procured through a competitive process are an example of a market-based approach that does not involve real-time pricing for residents or other complexities with which consumer advocates may not agree. Appropriate valuation and compensation parameters, accounting for both accuracy and transparency, for value-added services at both the state and federal (e.g., FERC jurisdictional issues like sales of services affecting the transmission system) levels may need to be clarified. Regulators will need to address the treatment of costs and revenues relating to utility products and services for the purpose of rate base calculations. This may require reviewing current rate design mechanisms, tariffs, and rules to support consumer decisions, provide pricing signals that promote efficient decisions, and promote actions which increase the overall public benefit. Addressing new pricing mechanisms for non-monopoly services, based on market-based principles, may become more critical as competition and third-party services increase.

¹¹³ Energy and Environmental Economics Inc. (February 2011).



E. Potential Inequities

Utilities or third-party providers may attempt to influence the direction of policy in a state preemptively, to either ensure the status quo continues or to break into a nascent marketplace before other competitors. Such influence and action could have a detrimental effect on either the utility or third-party providers entering the product and service offering marketplace. Ensuring nondiscrimination by the utility among third-party product and service technologies (e.g., scheduling, dispatch, interconnection, and infrastructure planning) will be important; however, some of these technologies may remain in the consumers' or third parties' control, not in the utility's control. The consumer can decide whether to participate in a utility's offerings (e.g., special tariff, program or procurement solicitation). As previously mentioned, it may be necessary to review current regulations as they relate to affiliate transactions and ensuring that codes of conduct properly account for any potential new utility offerings. Resources may need to be evaluated to ensure a level playing field, which may be more difficult to achieve if a utility is allowed to compete to provide competitive products and services on the grid that it owns and maintains.

3. How should regulators address utility costs for new value-added services, considering customers who do not participate in these offerings?

With respect to costs, regulators need to ensure there is differentiation between basic electric service and value-added electric service, and appropriately assign the costs of the two; otherwise, the costs will be assessed against all customers, not just those utilizing the services.

A. Associated Financial Costs

Potential financial implications that regulators may need to address include the following elements:

- Differentiating between the value of basic versus value-added electric service — a critical threshold question with the answer potentially changing based upon the state or the party considering the service
- Determining necessary utility grid improvements and investments for allowing new value-added products and services while ensuring proper cost allocation to the appropriate rate classes, users or cost-causers
- Establishing fair compensation for any benefits value-added products and services may bring to the grid
- Calculating engineering costs and complexities of grid enhancements
- Deciding who should finance the costs of new technologies still gaining experience in the market
- Defining the financial payback time for new technology investments
- Determining what, if any, stranded assets may exist and how those assets should be compensated
- Establishing compensation mechanisms, paid for by the utility or market, for products and services



- Reviewing any financial incentives offered by local, state or federal policymakers ensuring each is properly allocated to utilities, third parties and consumers

There is a distinct need for utilities to enhance their current accounting practices and procedures to incorporate additional detail when recording their activities to better differentiate work associated with basic services versus value-added services to ensure costs follow the cost causers. Investments that do not benefit the entire system should not be socialized over all consumers. For example, if a consumer desires 100 percent renewable energy, then the consumer should bear the incremental cost associated with this choice, or at least for the portion above the minimum renewable content requirement for retail electricity sales in the state at issue, such as the amount set in a state’s renewable portfolio standard.

B. Other Costs

Question 3 focuses on utility costs, presuming that the only costs to consumers might be financial; however, there is also a time, or nuisance, cost related to these new product and service offerings.¹¹⁴ Consumers may experience a certain level of calmness or peace of mind from not feeling forced to make decisions on issues they do not care about or want to spend additional time on, such as reviewing multiple energy products and services, their respective fact sheets, reviews, disclaimers and the like.¹¹⁵ For example, with a time-of-use rate, it is questionable whether consumers actually want to spend their limited free time thinking about when it might be most cost effective to run their dishwasher or washing machine. The future is where the consumer does not have “front of mind” thoughts about these issues as they will happen automatically through smart appliances and other emerging technologies.¹¹⁶

“Life is short and people are busy.... For many people, life is good in part because a series of desirable default rules are in place, ensuring that if they do nothing at all, things will go fine. [O]ften we rely on the fact that choices are made by others, and we go about our business without troubling ourselves about them. This is a blessing, not a curse.” — Cass Sunstein

¹¹⁴ Sunstein (December 2013). Quoting Mr. Sunstein, “Life is short and people are busy.... For many people, life is good in part because a series of desirable default rules are in place, ensuring that if they do nothing at all, things will go fine. [O]ften we rely on the fact that choices are made by others, and we go about our business without troubling ourselves about them. This is a blessing, not a curse.”

¹¹⁵ According to the most recent Residential Energy Consumption Survey released by the U.S. Energy Information Administration, “Although more than half of all households have a programmable thermostat, only one-third of those households use the programming feature to actually set the heating temperature.”

¹¹⁶ NASUCA does not support default opt-out rate programs, but does note more recent work by Mr. Sunstein regarding default time-varying prices and application to automated devices as a way to increase customer program participation and potential programmatic results. Schneider and Sunstein (October 13, 2016).



4. What policy and regulatory approaches best balance promoting innovation with consumer protection?

Sound regulation ensures that the risks and rewards between consumers and utilities are balanced. At a minimum, there should be a strong, transparent and enforceable affiliate transaction policy and rules to minimize cross subsidies and stranded assets. There should be a clear delineation between essential and nonessential services. The former is needed to provide safe and reliable service at just and reasonable rates. The latter should be promoted and exercised in the context of a competitive market. NASUCA offers the following potential policy and regulatory approaches which are not meant to be mutually exclusive; in fact, most are complementary.

A. Jurisdictional Approach

To ensure consumer protection, it is necessary to determine and ensure the appropriate entity (e.g., utility regulatory commission or State Attorney General) has oversight over third-party providers and that the appropriate entity ensures these third-party providers comply with applicable regulations, including data privacy and cost allocation.

Numerous advocate agencies have had negative experiences with third-party providers, such as retail energy providers and some solar leasing companies which have engaged in fraudulent and deceptive trade practices, improperly installing DG systems, leaving contract obligations unfulfilled, limiting their consumers' legal remedies, and inadequately disclosing contract terms.¹¹⁷

To address these issues, NASUCA encourages legislatures, state utility commissions, State Attorneys General and consumer protection agencies to coordinate their activities to ensure rights of consumers are fully and fairly protected and enforced under existing or new statutes and regulations; educate consumers regarding their rights and obligations under service offering contracts, either from the utility or third-party provider; and establish and enforce standards for the marketplace which promote equitable treatment and safety of consumers.¹¹⁸ Similarly, if the utility is to provide an open-access platform and more third-party providers are allowed to offer

¹¹⁷ NASUCA Resolution 2014-05, *Urging Broad Consumer Protections for Distributed Generation Customers* (Adopted November 18, 2014), <http://nasuca.org/protections-for-distributed-generation-customers-2014-05/>. Community solar and consumer protection have been addressed by the Maryland Legislature and Maryland Public Service Commission (PSC) through law and regulations. See Maryland Rulemaking Docket No. 56 at <http://www.psc.state.md.us/rm56-community-solar-regulations-rule-making-notice/> and final PSC regulations COMAR 20.62 at www.dsd.state.md.us. Pursuant to 2013 community solar legislation, Maryland's consumer counsel has had experience with regulators attempting to address a community solar pilot program, its relevant regulations and tariffs, and necessary consumer protection requirements for subscribers comparable to regulations for energy suppliers. Maryland also has experience in a microgrid docket addressing utility versus third-party provider responsibilities. In regards to rooftop solar leasing and consumer protection concerns, see LSU Ag Center (February 2015).

¹¹⁸ *Ibid.* at 2.



products and services to consumers, then it becomes even more important to have uniform standards, enforceable rules, clear jurisdiction, and guidance to ensure consumers are protected. By contrast, a certain amount of flexibility in regulations and product and service marketing will be key for technologies to evolve to meet changing consumer demands.

B. Information Approach

A product or service is typically a solution to a problem or perceived need. The identification of inefficiencies and other problems may be detected through data creation and analytics. Without access to data, service providers will not be able to provide solutions and services. Data collection and dissemination practices may need to be changed to allow non-utility market participants to better understand the demographics and energy activity of consumers. To ensure data privacy, these data will need to have all consumer proprietary information removed before it is released to the market. The data will provide third-party service providers insights into providing the most efficient products and services for the utility's specific consumer subsets without attempting to propose such services in a data vacuum.

C. Analytical Framework Approach

Another approach is for regulatory bodies to develop an analytical framework to assess grid modernization technologies, benefits, challenges, costs, and the potential services such technologies might enable.¹¹⁹ Grid modernization technologies and all of the associated services that are enabled by these technologies are constantly developing, whether they have been proposed by a utility, third-party provider, or other market participants. The most effective way to address these technologies and their attendant concerns is to establish upfront an objective assessment. This work will identify who should offer services, who should provide a platform for these services, and how (and by whom) the costs of the services should be paid. When consumers are asked to pay for new services or assume new risks for services, a full analysis of the proposed service should be required.

In determining whether utilities are appropriately accounting for their product and service offerings, regulators may wish to consider tools such as well-designed performance metrics.¹²⁰ While outside of the scope of this report, performance metrics could help to measure whether the value-added service has resulted in an outcome favorable to the public good. Under optimal conditions, regulators will only approve the provision of value-added services if they are truly capable of providing systemwide benefits or if the costs of the value-added service in question

¹¹⁹ See Corneli and Kihm (2015) for an example of a regulatory framework — the potential profitability and social benefits of coordination framework — that may help states decide what value-added services may be offered and by whom — either utilities or third-party providers — with state policy objectives in mind.

¹²⁰ See Costello (June 2010); Whited, Woolf, and Napoleon (March 9, 2015); and Lowry and Woolf (January 2016). See also Minnesota Public Utilities Commission Docket No. E-002/GR-15-826, In the Matter of the Application of Northern States Power Company, d/b/a Xcel Energy, for Authority to Increase Rates for Electric Service in the State of Minnesota, *Direct Testimony and Schedules of Minnesota Office of the Attorney General – Residential Utilities and Antitrust Division Witness Ron Nelson* (June 14, 2016). Testimony discusses performance metrics and economic incentives in relation to Xcel Energy's rate case (pp. 3–20).



are borne by only the consumers who benefit from the service. Well-designed performance metrics can help regulators and consumer advocates monitor the provider's progress toward the established goal.

Conclusion

NASUCA's key takeaways and recommendations include the following:

1. Ultimately, the question comes down to what value-added product or service offering, offered by which entity — the utility or third-party provider — best benefits the consumer and provides maximum benefit to the public.
2. Recognition needs to be given that states differ in relation to market structure, whether regulated or deregulated.
3. Some consumer advocates may not oppose utilities offering new services, some may oppose such offerings, and some may be open to allowing such offerings with the appropriate protective measures in place.
4. Additional recognition must be given to the fact that some utilities are already offering value-added products and services.
5. Stakeholders need to come to a consensus on the definition of basic service and value-added services.
6. Basic service is not a value-added service, and the electric utility should provide basic services to all consumers.
7. States should decide whether utilities or third-party providers are in the best position to offer value-added products and services to consumers and ensure appropriate consumer protections are in place.
8. Costs and values of value-added services should be quantified.
9. Regulators should attribute and charge the costs of value-added services to those who want and use them.
10. There need to be assurances that the product or service being offered actually provides the benefit or solution it promises.
11. Regardless of whether the utility offers competitive products and services, it should fairly offer a neutral, open, nondiscriminatory platform for competitors, at the same time recognizing that the grid system exists to benefit consumers and is not solely for third parties to make offerings.
12. Individual personal consumer information must be protected from unauthorized disclosure, and privacy of such information should be the default.



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